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NEWSPAPER

CW Photos by Edward J. Bride

John Gosden, vice-president, Equitable Life, discusses charge-back problems at The Conference Board meeting.

Top Managers Now Making Better Use of Computers

By Edward J. Bride
Of the CW Staff

NEW YORK – For two decades, the computer has been accepted as an indispensable aid to engineers and scientists, and for accounting and finance applications, yet attempts to use computers to extend management's brainpower have sometimes brought confusion and doubt.

Today, however, computer modeling of operations is changing from "curious" to "a practical real-life portrayal," and there are indications that management-computer specialists are being developed by universities.

Stanley J. PoKemper
"involvement trend"

This message was delivered to some 175 senior managers and DP executives here last week by Simon Ramo, vice-chairman of TRW, Inc.

Addressing the keynote session of a conference on "Senior Management and the DP Function," Ramo stated what many other speakers would later imply: "the greatest remaining handicap to the fullest, sensible use of the computer as an aid for senior management consists of the senior managers themselves."

These people often fail to assign the right role to the computer, he noted, namely to "assist the manager" in some aspects only, still leaving him "full scope to manage as he chooses.

"If a manager has not yet found a computer useful to him in management," Ramo continued, "it means he has not yet a competent team and that he does not yet understand how to obtain the benefits."

Of all the topics discussed during the two-day conference, personnel ranked highest in attendee interest. The meeting was sponsored by The Conference Board and the Special Interest Group for Business Data Processing, a subgroup within the Association for Computing Machinery.

Other conference coverage on Pages 4, 29.

One reason for such interest in personnel was expressed by G.C. Durand, assistant vice-president of data processing at Southern Railway.

Durand commented that DP manage-

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Canadians Have Mixed Feelings About Computers, Study Shows — Page 3

Data Gathering on Dissidents In 60s Was 'Out of Control' — Page 8

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New IBM Price Hikes Send Users Checking Leases

By Vic Farmer
Of the CW Staff

ARMONK, N.Y. – Users received IBM's price increases last week with mixed emotions ranging from, "we'll have to pull our budget back from top management," to "the effect will hardly be noticeable."

The key to these varied reactions hinged on the degree to which each installation had made use of third-party leases, or IBM Extended-Term (ETP) or Fixed-Term Plan (FTP) leases – all of which guarantee some form of price protection. The Cost of Living Council has approved the increases which were submitted to it Sept. 28.

The new IBM prices call for:

- A 2% increase in rates, effective March 1, for all users under monthly availability charge (MAC) plans with a few exceptions.
- A 2% increase in all monthly maintenance charges, education and publications costs and all program products.
- A 2% increase in all new equipment purchased with a few exceptions.
- A 2% increase in all new contracts for application customizer services.
- A 10% increase in new systems engineering services.
- A 10% increase in hourly per call maintenance services.

Users of FTP and ETP leases that were in effect before Nov. 26 will not be affected, but any new FTP or ETP leases or extensions signed after Nov. 26 will have the 2% increase added.

Users of Term Lease Plans (TLP) with contract periods that started on or before Nov. 23 – or with TLP or purchased equipment ordered and scheduled to be shipped between Nov. 26 and March 1 and with the TLP supplement signed and accepted before Nov. 23 – will not be affected by the 2% monthly increase.

If a user had signed his lease and had it accepted before Nov. 26, but shipment is scheduled after March 1, he will have the 2% increase tacked on to his contract.

With delivery dates for purchased equipment scheduled after March 1, even though the contract had been written and accepted before Nov. 26, users will pay the new price, according to an IBM spokesman.

Last Increase in August

The last IBM price increase was in August 1972 and raised the rates for some field engineering and system engineering services.

IBM, just two weeks ago, increased the

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DP and Watergate

Can a computer "find" the erased 18 minutes of a Watergate tape? Signal enhancement techniques have been used with some success in the past to interpret erased tapes, according to electronics experts. Story on Page 4

Energy Crunch? Most Users Still Aloof

Few Planning to Set Job-Run Priorities

By Toni Wiseman
and Marguerite Zientara
Of the CW Staff

NEWTON, Mass. – It might be apathy, unconcern or just disinterest, but the majority of data processing managers contacted by *Computerworld* remains indifferent to the effect the energy crisis might have on its shops.

Echoing the results of a previous CW survey [CW, Nov. 28], most users said they were doing little, if anything, to meet possible power shortages.

Eighty-three percent said they have not set, or given any thought to setting, priorities on their job runs.

And 67% of those interviewed have not made any provisions for backup power in the eventuality of brownouts or blackouts. Some said they could function, though not optimally, with brownouts, and if there were blackouts they "would just have to shut down."

Several users felt there was no need for them to be concerned.

Samuel Wee, DP manager, Primary Children's Hospital, Salt Lake City, Utah, said he checked with the DP manager of the Utah Power and Light Co. who indicated there would be no brownouts or shortages.

In Greensboro, N.C., Ray Harris, DP manager for Blue Bell, Inc., had also been assured by the utilities and power companies that there would be no power shortages.

"I don't know at the moment of any area where the energy crisis is impacting us," said James Carley, Doubleday & Co., Garden City, N.Y., "but I imagine that in the long range it could, from the point of view of tapes, disks and things like that."

One manager, however, admitted that although he did not now have an uninterruptible power source, he was "certainly much more interested in it than I was two weeks ago."

'Extremely Hypothetical'

Managers were still also generally unconcerned at the possible implementation of a four-day work week. Some had not con-

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But One User Acts, Reviews Alternatives

BRIDGEPORT, Conn. – Amid the general user apathy, at least one DP manager is seriously concerned about the energy situation.

Michael Kamins, DP manager for the City of Bridgeport, has been at his job for only a couple of weeks, but already he is reviewing job-run priorities, the possibility of a four-day work week and the essentiality of reports generated.

Though everything is still in the planning stage, Kamins is investigating the possibility of producing some reports on

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On-Line Access to All Auto Data Possible

By Ronald A. Frank
Of the CW Staff

PHOENIX – A national law enforcement communications network that will begin operations on Christmas Eve could eventually tie all the nation's motor vehicle records into one on-line data base.

The National Law Enforcement Teletype System (NLETS) will initially be a store-and-forward message-switching connection between the police agencies of the states.

The NLETS network is a joint effort of state law enforcement agencies and the Law Enforcement Assistance Administration of the Justice Department, according to Bernard Flood, NLETS executive director. In addition to motor vehicle and driver's license information, the NLETS network will provide "split-second notification" on whether a vehicle's owner or other person is wanted in connection with a major crime, Flood said.

One of the existing problems that would prohibit on-line access is the differing motor vehicle record formats

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IBM Hikes Send Users Checking Leases

(Continued from Page 1)

prices of 80-column punch cards by $.06 per 1,000 to $1.07 per 1,000.

Very little equipment has escaped the 2% increase; exempted equipment includes: 370/115 CPU, System 3/15 CPU, 3340 direct access storage facility, 3704 communications controller, 3600 finance communications system, 3650 retail store system, 3660 supermarket system and the 3336 Model 11 double-density disk pack.

Federal systems users will be protected under the present GSA contract until June when a new contract will take effect.

Although all the other mainframe makers surveyed last week after the price announcement either declined comment or said they would not follow IBM's lead, several industry sources predicted a rash of similar increases now that the IBM umbrella moved up 2%.

James Peacock, managing editor of *EDP Industry Report*, computed that the 2% increase would cost the U.S. DP users over $90 million extra in 1974 just from the increase in IBM rentals and maintenance rates alone.

Because of the extensive use of independent vendors and third-party leases not all users would be equally affected by the increases. Most IBM-dedicated users not protected by longer term lease plans face a two-thirds of 1% increase in their 1974 budget because the average user's total DP budget has only one-third allocated for hardware.

Louis J. Pijar, DP manager for Nash Engineering, Norwalk, Conn., is one of these users and his reaction was: "We're not happy with it, but we have to accept it."

Pijar, whose budget for 1974 had been planned and submitted to top management a month ago, is under the normal corporate budget restrictions wherein once the budget is submitted no changes are allowed. He anticipates the increase will put him $8,000 to $10,000 in the red if he can't change his 1974 budget which includes two 370/135 systems.

Dieter Cordes, data center manager at Lincoln National Bank & Trust, Syracuse, N.Y., is presently working on his budget and had just received IBM's notice to customers – the 43-page price guide to what's going up and staying the same. He didn't sound too eager to investigate what the price increases meant to his budget, but he believed he would have little trouble getting the increases for his 370/145 system.

On the other hand, Anson Lovellette, running a 370/168 center for Whirlpool Corp., Benton Harbor, Mich., wasn't too concerned. "The only effect for us will be our maintenance and peripherals cost because we have a third-party lease with a division of Bank of America, and the CPU is brand new with nearly a year to run on the warranty."

One of the most nonchalant users was Haskell E. Mason, corporate planning manager at Dolly Madison Industries in Huntingburg, Ind. The only equipment he gets directly from IBM for his 65K 360/30 is a card reader and tape drive, and he said "it won't hurt at all."

Energy Crunch? Most Users Still Indifferent

(Continued from Page 1)

sidered the possibility, others were sure it would not be implemented because it would "simply be impossible," and one said it was "extremely hypothetical."

Governor Francis W. Sargent of Massachusetts, however, has said he is studying the possibility of a mandatory four-day work week.

Being unconcerned over the threat of an energy crisis, most users did not feel they would have to cut back the number of reports generated.

Could management operate effectively if regular DP reports were run less frequently or curtailed completely?

"I would hope not," said Donald Leusch of National Biscuit Co., New York, "because that would be saying that all the things we do aren't important."

Bob Hurley, Coca Cola Co. Foods Division, Houston, said his management could probably operate, but with less control.

"If they have to get certain weekly reports on a monthly basis, then they'll just have to function," said Irving Boyce, DP manager, Avis Rent-a-Car System, Garden City, N.Y.

Terry Freeze of Allegheny Airlines, Washington, D.C., however, doubted "very seriously" that management could function without the current number of reports, although he admitted that some historical reporting could be reduced.

But One User Acts

(Continued from Page 1)

a monthly instead of weekly basis.

"All reports are under review," he said. "This is not a decision which will be made strictly within the data center. We'll be getting back to the comptroller, finding out what he absolutely needs and what he might be able to survive with on a less often basis.

"My first concern obviously is what a 5% cutback on power would do to us on a daily basis," Kamins said. Starting last week, a 5% brownout between the hours of 4 p.m. and 8 p.m. went into effect in New England.

"Of course it is not going to impact us at the 5% level," he continued, "so we are now looking into what to do for longer periods or a greater reduction in power."

The department is looking into back-up systems, he said, adding that he will soon meet with his vendor, IBM, to discuss the power situation.

Network May Link All Auto Data

(Continued from Page 1)

used by each state. But one NLETS systems official said standard headers and other common formats used by the FBI's National Crime Information Center could be applied to NLETS.

"It is questionable whether the attorneys general in these states would allow other states to access their motor vehicle records on-line," the official said.

The NLETS network is essentially an upgrading of an existing administrative message system that has operated between states using Model 28 TTYs. Under its new configuration NLETS will include dual Telecontroller message switchers from Action Communications Systems, Inc. in Dallas.

The Telecontrollers will be installed in Phoenix, which will be the central point in the NLETS system.

States accessing the network will use Model 37 TTYs operating at 150 bit/sec with Bell 108A modems.

At first, all NLETS inquiries will be transmitted to the motor vehicle record headquarters in each state. At these locations terminal operators will access the state records and then enter the responses back into the NLET for transmission back to the inquiring agency.

DPers to Reprogram For W2 Form Changes

WASHINGTON, D.C. – DP users preparing to run their 1973 W2 forms will have to reprogram their printer routines significantly because the Internal Revenue Service has reformatted the tax forms.

The rearranged W2s are reportedly designed to facilitate a change to optical scanning, according to one expert at a forms supply house.

Among the changes that will make it more difficult to print the W2s are less space for total wages, a clustering of city and state totals on the right side of the form and the addition of scanning marks in each box.

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Benefits Acknowledged but DP Accuracy Questioned

Computer Elicits Mixed Feelings in Canadian Study

By T. Mary Whiteman
Special to Computerworld

OTTAWA, Ont. – Many Canadians view computers as a mixed blessing. While most people surveyed in a national sample feel computers can benefit society, one out of every two people interviewed question their accuracy and seven out of 10 see serious errors resulting if human factors are not considered.

The report was made for the Canadian Government's Department of Communications and is based on a study by the Social Survey Research Centre of Toronto. An analysis of the study was undertaken for the department by Dr. Benjamin Singer, a consultant for the University of Western Ontario, department of sociology.

Canadians also feel computers can contribute to education and scientific research, assist government and business in making decisions and help with the practical problems of daily life by providing services such as reservations, teleshopping and medical advice through home terminals.

The report, "Public Attitudes Toward Computers," indicates that people's attitudes toward computers are influenced by such factors as age, sex, profession and whether they live in the city or in the country.

Key findings include details on the public's awareness of computers, the impact of computerization and the computer's role in the home of the future.

Of those interviewed, 72% report having had contact in their homes with something printed out by a computer. Bills are identified as "computerized" by about 50% of the sample.

Some 12.6% report direct contact with computers.

Although only one out of eight claim direct contact with computers, the level of general knowledge is relatively high, according to the study. Over half (52%) can name at least one computer manufacturer, according to the report.

As many Canadians (49.9%) had heard of in-house computer terminals as were unaware of this possibility (49.7%). Of the first group, 53.9% believe that individual families will eventually have such terminals and 34.3% disagree.

Sixty percent of the Canadian public sees the computer as a very efficient mathematical machine, but when queried about the computer's accuracy and exactness, 45% feel computers are accurate, while an equal number disagree.

Some 16% of the respondents consider the computer an intelligent machine, while less than half of these feel it is more intelligent than the average person.

About one out of five respondents think the computer is just another appliance.

Attitudes on the impact of the computer on society are also revealed in the study. Some 86% agree computers can make important contributions in the areas of scientific research and 85% in information availability.

Respondents also think the computer is valuable in enabling government and business to make better decisions (53%) and in improving the quality of education (58%).

The report notes, however, "Respondents appear somewhat less committed to the conceptual or decision-making ability of the computer than they are to its more rote functions of data retrieval and factual compilations.

Leisure Time

"Although there is a tendency among respondents to agree with the statement that 'computers will give us more leisure time' (73%), they do not necessarily associate this additional leisure time with a higher standard of living," the report added.

"Only 47% agree that computers will raise the standard of living, while an additional 35% disagree."

The controversial issue of the impact of computerized information systems on personal privacy drew an ambivalent response. Some 48% believe computers do not threaten personal privacy, while 37% think otherwise. Fifty-two percent believe computers "will cause a violation of confidentiality."

The report points out that in both instances the terms privacy and confidentiality were defined objectively by the respondents to the study.

Home Terminal

The much-heralded home terminal was also investigated in the study. Out of a list of 52 possible in-home computer services, 30% of the respondents reject all of them. Among the services suggested, only two reach a 40% level in a "strongly wanted category;" these involve traffic and road conditions (42%) and emergency medical service (41%). The few remaining services with a 30% level include travel advice, transportation time tables, plane and train reservations. TV schedules and movie schedules via a home terminal score a 31% rating.

Power to the People

PORTLAND, Ore. – "Power to the people" – that's what one computer's motto seems to be in an effort to save electricity.

Seven hundred kilowatts a week are being saved in the computer quarters of the Multnomah County Intermediate Education District headquarters, according to spokesmen.

In an effort to save electricity:

- Lights are switched off in rooms not being used.
- The computer is switched on only between 7 a.m. and 6 p.m., five days a week, whereas it was formerly working 24 hours a day, seven days a week.
- All air conditioners have been reset to work at higher temperatures than before.

State Bilks Bike Thefts

TULARE, Calif. – Today California, tomorrow the world! That may be how police in Tulare feel as they hook up to a centralized "stolen bike" computer now fully operational in Sacramento to aid law enforcement agencies throughout the state.

The Sacramento computer stores all records concerning stolen, lost, found and pawned bicycles with wheels more than 20 inches in diameter or frames larger than 14 inches.

The problem in the past, according to Tulare Police Chief Clem Lincicum, has been that individual cities have had extensive bicycle files but there was no statewide central depository for this information.

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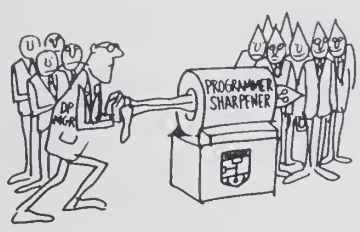

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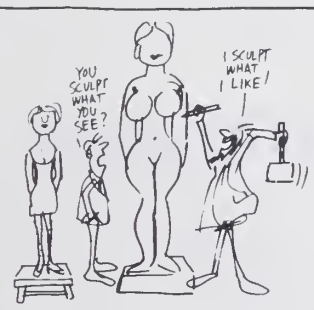

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Proper Approach Can Optimize Effects of DP Centralization

NEW YORK — Centralizing DP administration for a firm generally benefits the data processing people involved, but communication with user departments can become a sticking point, Robert B. Anderson, the president of Sun Services Corp. said.

Speaking at a Conference Board meeting on "Senior Management and the Data Processing Function," here, Anderson said while all people within a company will be affected in different ways by organizational centralization, management's major goal in all data processing decisions is to provide the best service for the least cost. If this objective is met, the overall user effects have to be favorable.

People Effects

What are the people effects of the organizational choices managers face?

There are two sets of effects, one as seen by data processing personnel and the other as seen by the data processing managers.

Data processing personnel, he said, are primarily concerned about the following effects of centralization and decentralization:

- Career path opportunities: in data processing and in the user organization.
- Technical skills enhancement: formal training function and plans; the working-together of professional groups; risk of becoming, or being viewed as, elitists or technocrats; technological obsolescence.
- Communications: with users; with own organization; with professional organizations.
- Control of work activities: freedom of project selecting policies, procedures and standards.
- Variety of assignments: number of users served; data processing technology exposure; different management styles.

On the other hand, Anderson said, data processing managers are concerned with:

- Overall flexibility and expense to firm: ability to balance supply and demand for scarce manpower; skill levels required; data base opportunities and administration.
- Personnel recruiting: availability in tight market, especially high-talent specialists; leverage options across the corporation for specialists; hiring costs.
- Development and effective use of standards: development costs; training complexity; consistency; mobility of personnel; quantity and quality of output.
- Training: dedicated training function; personnel mobility – diversity of assignments.
- Project and equipment selection: selection criteria; profitability of projects and equipment selected.

What can managers do to create the best environment for data processing people and also the users?

There is no one best organizational solution, Anderson pointed out, not even for a single company through time. But no matter which set of alternatives is chosen, the glue that can make it all hang together and ensure the best overall results is functional guidance and control. Functional guidance includes:

- Advanced technology planning.
- Long-range strategic planning and goal-setting.
- Manpower development and training plans.
- Consistent project selection criteria.
- Effective performance measures.
- Effective policies, procedures and standards.

Functional control involves the review and analysis of performance.

The very nature of data processing makes effective functional guidance a good tool for profitability and improved performance. This is one of the key variables to adopt in terms of the organization structure. It can help to offset the less desirable people effects and enhance the desirable ones, Anderson noted.

The key people effect is communications with users. This includes communications between systems analysts and users in developing and maintaining systems and also between operations' customer service representatives and users in the scheduling and timely completion of jobs. The corollary effect involves communication among the data processing personnel, Anderson said.

Numerous proven strategies are available with organizational centralization to narrow the communications gap – even eliminate it for all practical purposes – if you have an effective, cooperative management team, he indicated. These strategies include:

- Dedication of analyst and programmer groups to each major user.
- Joint project planning – one- to three-year plan.
- Consistent project evaluation criteria among users.
- User-established priorities – projects and operations.
- Project controls requiring user management reviews and approval.
- Data processing manager attendance at user staff meetings.
- Career path transfers of data processing personnel into user groups.

DP to Seek Tape's Lost Minutes

By E. Drake Lundell Jr.
CW Washington Bureau

WASHINGTON, D.C. – The special Watergate prosecutor's office is planning to use computerized signal enhancement techniques in an effort to reconstruct the 18 minutes of a Watergate tape erased by President Nixon's personal secretary, Rose Mary Woods.

The prosecutor's office confirmed last week it was planning to use the techniques after their use was first suggested in open court by Fred Buzhardt, the White House lawyer on the case.

Although the prosecutor would not describe the exact procedures he said had been recommended by electronics experts, signal enhancement techniques for erased tapes have been used by the Central Intelligence Agency, the FBI and other intelligence branches in the past.

The techniques are also said to be similar in some respects to the image-enhancement computer systems used to reconstruct digitized pictures sent back from space missions.

Most sources familiar with the techniques, however, warned they are not foolproof and success in reconstructing tapes is in no way certain.

At an ACM conference in Boston last year, Maj. Roger Schell of the Air Force's Electronic Systems Division discounted the theory that erasing or writing over magnetic media protects the data formerly encoded on those files. At least in laboratory conditions, he said, overwrites and erasures can be filtered up to five levels.

Former CIA sources quoted by the *Washington Post* here admitted that intelligence agencies have used enhancement techniques in the past to reconstruct conversations on tapes with some success.

They said the tapes continue to give off latent signals of the conversations that after filtering, processing and amplification processes can be reconstructed by a computer system. After the initial filtering and processing, they said, the tapes would be reduced to a hissing that contained the latent conversation trace signals – if the erasure had not been caused by passing the tape through a magnetic field.

These conversation trace signals can then be reconstructed by a computer system, they said, giving either a partial record of the conversation or the entire conversation, depending on how effective the erasure had been.

Several sources, however, have noted the signal enhancement technique at best may only give a partial record of the conversation, which may not be very useful to the prosecutor and one that may in fact raise more questions than it answers.

Cost-Recovery vs Fair-Price

Evaluate Charge-Back Schemes

NEW YORK – A cost center approach to DP budgeting can help provide managers with realistic costs for cost-benefit studies, aid in developing realistic budgets and offer controls and indexes of performance versus expectations, according to John A. Gosden, vice-president of Equitable Life Assurance Society.

At a Conference Board panel on "Software Aspects of Managing the Development Process," Gosden discussed the special effects of detailed charge-back schemes on DP.

These effects can be divided into five groups, Gosden said:

- Gaming against the charging formula by designers.
- Gaming against the charging formula by users.
- Performance measurement of DP operations.
- Planning of DP operations.
- Decision-making in DP operations.

In a typical charge-back structure, Gosden said there are two basic types of activity for which there are charges – development projects and running jobs. Development projects have two main components – labor charges and computer charges for testing, while running jobs have two major components – data entry and computer charges.

There are relatively few problems in charging for the labor and data entry components on an hourly or item basis but computer charges have given rise to many alternatives and arguments.

Knowledge of the effects of charging development costs to users is limited, he said. Development costs are a form of investment, but there are few commercial users who treat major software systems strictly as capital expenses.

Most organizations put the costs in their expense budgets, and the major effect is to limit development because of expense controls. Usually this is seen in the establishment of committees which review project lists for "priority" items, he noted.

Cost-Recovery vs Fair-Price

A predicament in setting up charge-back schemes for computer charges is whether to use a detailed cost-recovery approach or a fair-pricing approach. The problem with a detailed cost-recovery approach is that it introduces distortions. For example, if a new machine is obtained and is lightly loaded, the initial users will pay a high rate; and as it becomes loaded, the rate will reduce and demand will increase when it is least needed.

The way to overcome the problem of early users paying high rates on a lightly loaded machine, Gosden said, is to develop cost-recovery rules by assuming that all shared equipment is fully loaded. Thus, early users enjoy the advantage of less contention for equipment at no cost-penalty. This also has the effect of producing stable charges from year to year and, therefore, introduces more reality in and more attention to charge-back costs.

Although it is important to keep the computer-charging formula simple, there are occasions when some details are important. For example, if there is high overhead associated with short tests that require mounting and demounting of peripheral devices, Gosden said, the user should make sure there are realistic charges for such handling.

Provide Good Mix

In a multiprogrammed environment, Gosden remarked, it is important to get a good mix of programs. A big problem is programs that monopolize a single resource and prevent other programs from being run at the same time. To discourage such programs one should construct a charging formula to increase prices for such monopolizers.

The simplest way to justify the particular formula is to use the following simplistic explanation of allocating charges in a multiprogramming situation:

First assume that all tasks are uniformly balanced, i.e., if one uses 3% of allocatable CPU, then he also uses 3% of allocatable core, 3% of allocatable disk, etc.

Then, if you always have a completely full configuration, a task that used P% of resources can be fairly charged P% of the desired hourly recovery rate. But if a task used over 50% of allocatable resources, and was a typical task, then perfect mixing is impossible. Therefore, tasks so large that they inhibit mixing should compensate by paying higher charges.

'74 Test Cancelled

RBP Exam to Be Restructured

PARK RIDGE, Ill. – The Data Processing Management Association (DPMA) Certification Council has approved a restructuring of the Registered Business Programmer (RBP) examination.

As a result, the RBP exam will not be offered in 1974, since it was felt it would be detrimental to potential candidates to offer the current RBP exam in 1974.

Instead, the council has recommended to the Institute for Certification of Computer Professionals (ICCP) that the restructured RBP exam be offered in 1975 under ICCP's auspices.

The restructuring, according to Eric Ustad, chairman of the Certification Council, will in no way diminish the significance or value of the RBP certificates earned by programmers in the past.

The revised RBP exam will consist of a core exam devoted to programming fundamentals and techniques. This part of the exam will be required of everyone.

In addition, a series of specialty exams in such areas as Cobol, Fortran, RPG, advanced programming concepts, real-time programming and teleprocessing will be given. These exams, designed to test a single subject area in greater depth, will be taken at the individual's option.

"Programmers, by the nature of their jobs and personal preferences, tend to specialize in various areas," Ustad said, explaining the theory of specialty exams. "The committee feels the DP industry needs to identify programmers by their specific work areas," he added.

22 Plead Not Guilty In Equity Funding Case

LOS ANGELES – All 22 men indicted here by a federal grand jury on 105 criminal charges stemming from the Equity Funding Corp. of America scandal have pleaded not guilty to all charges against them.

Among those pleading were two former members of the data processing department, William Mercado, 32, former director of management information systems and Lester M. Keller, 32, a programmer.

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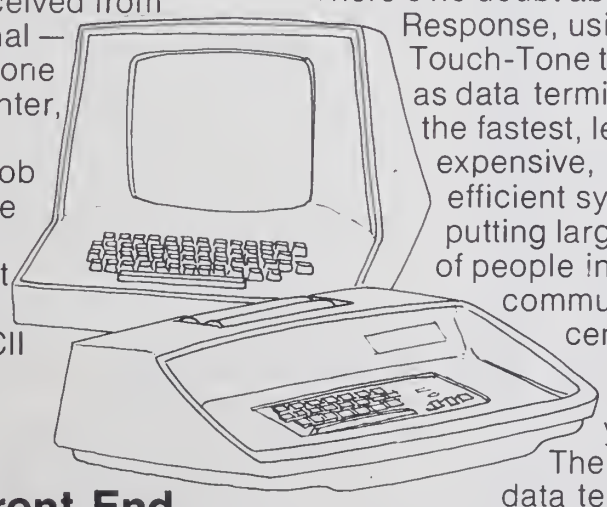

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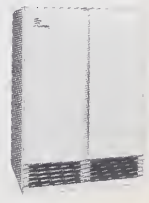

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Managers Making More Sense of DP

(Continued from Page 1)

ment traditionally has not been "people-oriented," but rather has been "machine-oriented." This approach was wrong, but things may be changing with the current trend of top management involvement in DP projects.

"The number of well-managed installations is increasing each year, as top management becomes more knowledgeable in data processing," Durand said.

On the other hand, "lack of direction" has been the most significant contribution to the "unsound management" of data centers, he noted.

Explaining the trend toward top-level involvement, Stanley J. PoKemper, coordinator of the Conference Board's management science programs, recalled that in the 1970-72 recession many companies cut back their DP investment, and this could be done only through such involvement.

Recalling that many companies reduced their number of mainframes early this decade, PoKemper said the very theme of last week's conference (senior management and the DP function) was a sign of the times.

As other such signs, he noted the Conference Board's various special groups are examining the energy crisis and the probable gloomy economic predictions.

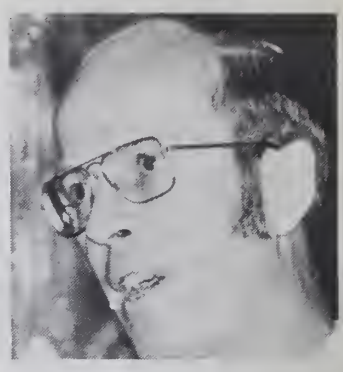
In the keynote address, Ramo also referred to the energy crisis as a "prime example of a management problem."

Stating the computer "can't bring peace between the Arabs and Israel, nor can it make up for failure to prepare for and inform the public of an energy shortage," it can nonetheless help solve today's power distribution problem.

"Even more important, every management decision on fuel allocation involves timing, location, pricing, priorities for various usages and assessment of the degree of handicap and dislocation caused by lowered supply."

Ramo called for the abandonment of "random, emotional decisions," in favor of "cool and analytical assessment and decision-making" in a situation "in which a man-machine partnership, specifically of the manager and computer, can and should be exploited to the fullest.

"In fact," he added, "it is hard to see how we can live through the energy crisis without heavy reliance on the computer as an aid."



G.C. Durand

Privacy Issue Can Test Managers

NEW YORK – With congressional action now under way, privacy regulation is almost a certainty. DP management thus must begin to consider the information it is collecting, who gets to see it and how individuals get to know the contents of their records, according to Professor Alan Westin of Columbia.

"Far from being another burdensome duty thrust on management by public interest groups, government and other forces," he commented, the privacy issue is "actually a superb opportunity for management to examine what its purposes really are in the use of information."

Westin said managers should also consider whether "information systems are properly oriented to people," rather than to "flowcharts and machine efficiencies."

He agreed that mechanization of records could make the protection of individual privacy more effective, if managers so choose.

Loose paper files, decentralized and with little security, can be much more accessible than properly protected computer files, he said.

Criteria Favor 'Strategic' View
...How Chase Handles Project Review

NEW YORK – Each major data processing project requires passage by a Request Evaluation Committee before the senior management at Chase Manhattan Bank signs off on it, according to Barry F. Sullivan, executive vice-president for operations at Chase.

Sullivan spoke at a session of the Conference Board's meeting here.

Each proposal, he said, is ranked on seven criteria as a "key part of our management system," and the criteria "encourage a broad, strategic perspective," without neglecting "technical practical realities."

Sullivan listed the following steps to project review:

- Competitive impact: Will this proposed system provide an opportunity to be the first in this area or take a lead over competition?
- Economic impact: How will the proposed system affect net operating costs? Revenues? How soon will it pay for itself?
- Management information and control: What impact will the system have on management's decision-making and control process?
- Urgency: How much does it hurt to postpone the proposed project for 12 months?
- Strategic support: Each project is measured against general corporate objectives – How does it move the bank toward its long-range goals?
- Technical risk: What is the risk of this project? Is the bank depending on new control software and hardware? How hard would it be to get people with the skill required?

The final category is what is called "definitional uncertainty. This measures how well we feel we understand the project, and how certain we are that the benefits it promises can be attained," he said.

Project management during the phases of detail design, implementation acceptance testing and cutover is reasonably standard, he said, stressing several important elements.

"We have a separate and independent assurance department, which reviews all deliverables. Specifically, documentation and coding must meet their standards, and they are responsible for final acceptance testing," Sullivan stated.

Another feature of the project management approach is the maintenance of a tight relationship between the DP department and the user organization.

"We provide each user area with a systems advisor to help in planning new DP projects, adequately defining the user requirements and monitoring the entire project development. In addition, frequent meetings and reviews are held to assess progress, take corrective action as necessary and sign off on all changes in costs, expected benefits or risks," he said.

The final control on the project management system is that the systems advisory committee of top corporate executives is kept informed of any significant deviations from plans as they occur.

For instance, "if we were working on an accounting system, and it was more than 10% behind schedule or 10% over budget or the expected benefits looked as if they would be $1 million instead of two, the committee would have to be notified. This serves to prevent surprises, and it also seems to encourage on-time, on-cost performance," he noted.

And Don't Forget Operating Level

NEW YORK – Past information systems have failed for some companies because developers emphasized top-level management information systems to the exclusion of operating level functions.

Stillman Brown, president of Pepsico Leasing Corp., said last week that information systems should pay their own way while providing general manager-level data as a byproduct.

Describing experiences at Frito-Lay, a Pepsico subsidiary, Brown commented that "there are several years and many interim steps" in implementing systems that will affect an entire company.

If systems are "properly planned, budgeted and controlled by management, however, benefits will begin accruing in the early stages," he commented.

The common advice, that top management must get involved in DP, is a two-way street, Brown indicated, noting systems personnel should become familiar with the business environment and operating objectives of a company.

He also cautioned users to "apply accepted management techniques to the computer function," a practice in which many companies are notably deficient, he said.

"Top management must get more involved and stop delegating this responsibility to technicians," and when this happens, computers will increase overall profitability of businesses, he predicted.

Converse With a Computer and...

GREEN BAY, Wis. – "Any student who does not become conversant with computers risks being a linguistic cripple in tomorrow's world," according to Dr. W. Werner Prange, dean of instructional services at the Green Bay campus of the University of Wisconsin here.

To put his theory into practice, Prange is using a Xerox Sigma 6 with 96M bytes of on-line storage for time-sharing operations for students to work on ecological projects.

"Given our emphasis on man and his environment," Dr. Edward Weidner, chancellor, said, "It is quite obvious that we need ready access to data on a variety of environmental systems.

"This includes statistical, analytical and case study information. Some typical applications are ecosystems analysis and environmental control.

Projects under way include a survey of nutritional patterns among elderly people in the area, a survey of the impact of educational TV in local grade schools and a survey of attitudes of local residents toward recreational use of the bay.

The computer has also been used in faculty research aimed at improving planning for nearby Door County. Data on all aspects of land, water, vegetation, climate, population and land use have been accumulated.

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Dick Pokorny, General Manager
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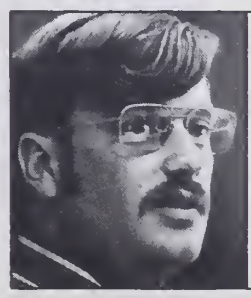

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Report Details Army Activities in the 60s

Data Gathering on Dissidents Was 'Out of Control'

By E. Drake Lundell Jr.
CW Washington Bureau

WASHINGTON, D.C. – The use of computers in storing personal information has made excesses "particularly tempting," according to the Senate Subcommittee on Constitutional Rights in commenting on the lessons to be learned from the Army's massive data gathering operation on political dissidents in the 1960s.

In a little noticed report and evaluation of the Army intelligence activities released this summer, the subcommittee, headed by Sen. Sam Ervin (D-N.C.), said those activities are "a classic example of a burgeoning bureaucracy going out of control," spurred in part by the availability of huge nationwide computer and communications networks.

"What began as a limited intelligence activity by individual commands responding to the military's limited need for information for use during civil disturbances mushroomed into an elaborate nationwide system with the potential to monitor any and all political expression," the group noted.

At its peak, the senators said the operation primarily involved the U.S. Army Intelligence Command and the Continental Army Command with the intelligence group as the principal data collector with 304 stateside offices and more than 1,000 trained agents in the field.

But both of these commands "maintained huge data banks of information obtained from these agents, and from external sources, including the intelligence units of other branches of services and the FBI."

The collection plans of the agencies involved were both "vague and overboard," the group added, and "this lack of definition resulted in collections of irrelevant, incorrect, ambiguous, and ultimately, useless information which bore no conceivable connection with the Army's civil disturbance mission."

'Too Little to Do'

The committee asked, "How did it happen?" and answered the query by noting: "It is probably because there were too many people with too little to do and yet with vast untapped resources at their disposal.

"Thousands of Army intelligence agents, trained for surveillance work, but with little opportunity to put it into practice, were loosed by their superiors on the American public. The gauge of success was the quantity of information recorded.

"And the myriad of Army intelligence computers were more than competent receptacles for all that the agents could transcribe," the analysis continued.

In all of this activity, the committee noted, "sensitivity to individual liberties was not an operative concern."

Callous Disregard

The entire affair is a "unique case study of bureaucratic insensitivity to individual liberties. The modern bureaucracy quite often places expediency – whether wittingly or not – above concern for individual liberties," the group noted.

"Even those segments of the bureaucracy which do have a valid justification for collecting personal information regarding the citizenry, are prone to go beyond their legitimate needs for information," the group added.

"Computerization has made such excesses particularly tempting," the senators warned.

"The collection and computerizing of information by government must be tempered with an appreciation of the basic rights of the individual, of his right to privacy, to express himself freely and associate with whom he chooses," it added, because "after all, the loss of anonymity, occasioned by having an opinion or an association recorded, creates a climate of subtle coercion."

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Admits 'Deficiencies'

Kelley Agrees NCIC Needs Legislated Controls

CW Washington Bureau

WASHINGTON, D.C. – FBI Director Clarence Kelley said last week he would "welcome" legislation placing controls over the operation of the National Crime Information Center and the Computerized Criminal History system.

In an interview with the *Washington Post,* Kelley said federal legislation to restrict the use of such systems would be "most acceptable" and he agreed with the recent National Advisory Commission Report on Criminal Standards and Goals that such information should not be made available to credit rating agencies and the press.

However, the FBI later issued a statement indicating Kelley still favors sharing FBI information with bank officials and with state licensing organizations, although to no other private firms or government agencies.

Some Dispositions Missing

Kelley admitted in the interview that at the present there could be situations where criminal history files do not carry the record of the disposition of the case, but asserted the FBI was trying to correct this deficiency in the system.

Kelley said the FBI wanted to develop a system where "dispositions come through immediately.

"I do not believe," he also said, "that we should have a carelessly administered system whereby there are possible leaks and possible inroads into what we have established as a secure system."

Aussies Mull Two Data Systems

CANBERRA, Australia – Two separate data systems may be in the offing in Australia – one a legal information retrieval system and the other a criminal data system – both to be based on large computers, according to *Computer Weekly,* an Australian newspaper.

Two special committees set up by Sen. Lionel Murphy, attorney general, are studying confidential reports on the systems, which would cost more than $30 million. The committees' recommendations must be accepted by the attorney general.

The systems would primarily assist Commonwealth Police and others looking for stored information on legal matters, such as statute law. There is also a proposition to use a big Canberra-based computer system to assist state police, particularly in regard to criminal data and statistics.

Univac, Burroughs and IBM have made tender offers for the deal.

It is likely the privacy committee, also under Murphy's jurisdiction, will comment on the recommendations of the two committees. The privacy committee is currently examining Australia's first computerized health insurance plan, slated to start next July [CW, Nov. 14].

Out With the New In With the Old

Special to Computerworld

TACOMA, Wash. – Remember the man who stuck with Model A Fords because he didn't believe modern cars were as good?

Richard Greco, Pierce County auditor, is determined to avoid the hazards of punched card balloting which have shown up in nearby King County and Seattle. He's stocking up on the old standby, voting machines, buying 50 from Washington's Kitsap County and 100 from Reno, Nev.

Punched card voting "will never be used here as long as I'm auditor," Greco said. With his new purchase, he now has 746 machines for 598 polling places, enough to handle population growth for the next 20 years, he said.

At $400 apiece, the machines usually cost $2,400 new, Greco noted.

"Using the present system," he pointed out, "we're always the first in the state with unofficial returns."

AF Plans Program For Entry Screening

ANDREWS AIR FORCE BASE, Md. – The Air Force has undertaken a program to develop an automated medical screening program for use in the Armed Forces Examining and Entrance Stations (Afees).

The Air Force, which said it hoped to announce a contract for the development of the system late this year or early next year, said the system would conserve medical manpower and provide improved information collection, storage and retrieval.

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CW-12

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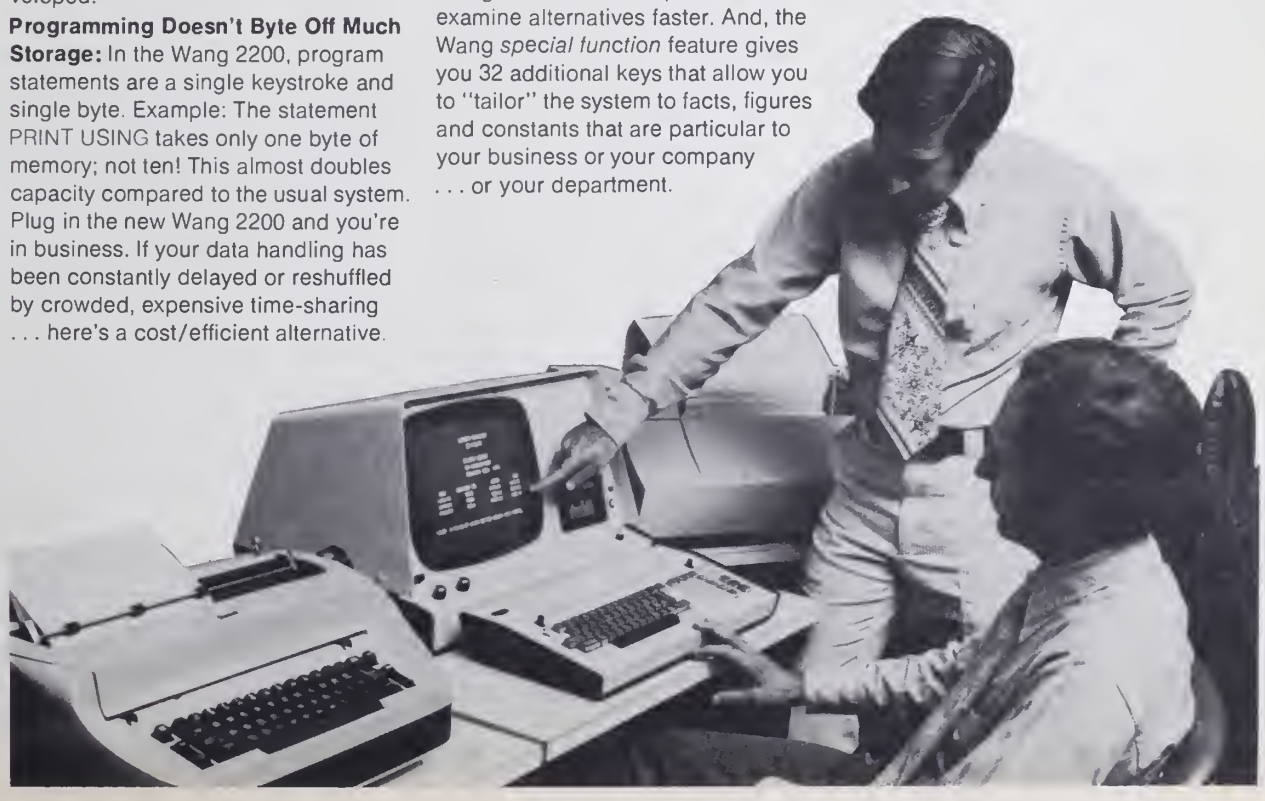


Editorial

No Matter the Cause...

Regular power brownouts have begun in the Northeast, between 4 and 8 p.m. daily.

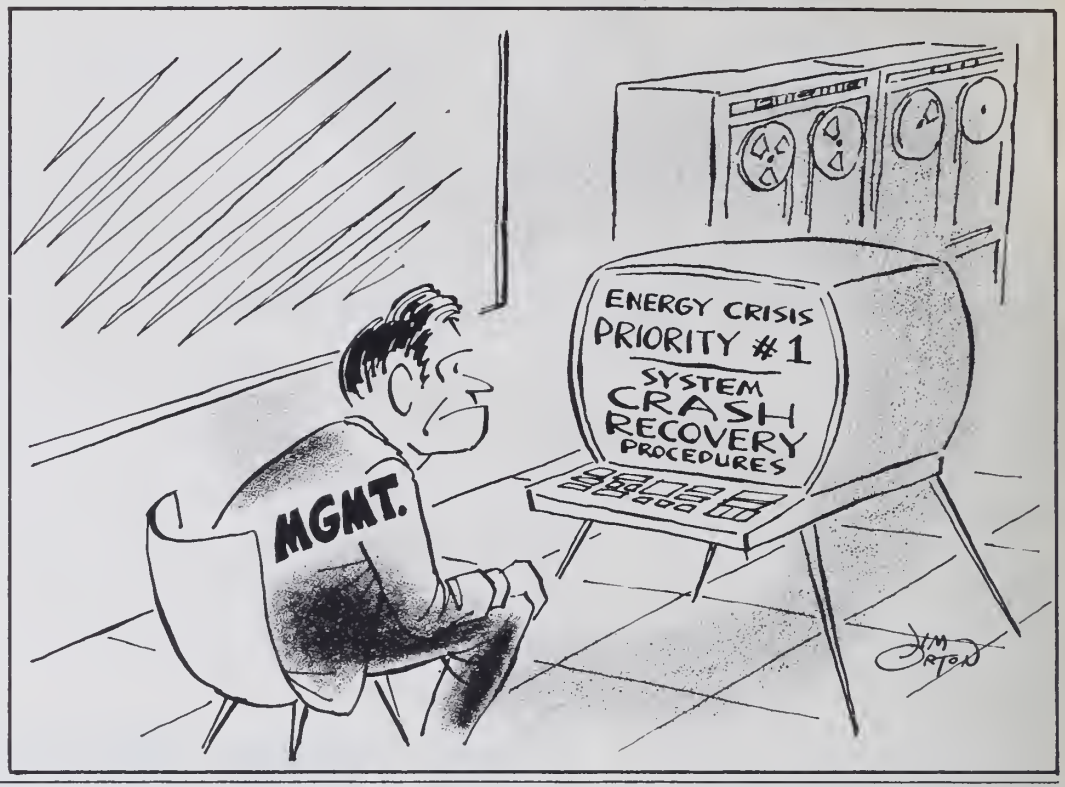
There was a time when this section of the country was considered safe from summer brownouts, because new power plants and power distribution systems were deemed adequate.

But that was before the petroleum crisis.

"Now more than ever" (to borrow a phrase), data processing managers have a responsibility to corporate management to implement procedures that will protect valuable systems in times of reduced power or failure.

While much has – and will – be written on the cause of the energy crisis users should be equally concerned about how they will deal with the problems that now seem certain.

There's Still Time, Brother



ACM Must Change Entire Outlook to Truly Improve

By Gerald H. Larsen
Special to Computerworld

Over a year ago, *Computerworld* published an article which contained many sad songs about the financial plight of ACM. I was sorry to hear about this and, as a member of ACM, decided to put in my two cents in the form of a letter to Walter M. Carlson, then president of ACM.

As I explained to Carlson:

I first joined ACM in 1959, remained a member for about three years and then quit. I rejoined sometime around 1966 because I felt ACM needed membership support and I hoped it would become a powerful organization capable of influencing its membership and perhaps a few important decisions in the world.

When I originally left ACM, it was because I was bored with it. As I saw things, ACM had become not so much an industry professional group as it was a home for members of educational institutions around the country to overwhelm us with their erudition on topics of vaguely modest interest.

As a reasonably influential person in my present organization, I find it extremely difficult to get members of our staff wildly enthused about ACM. They, too, continue to find it heavily educationally oriented, lacking in a certain amount of industry perspective, and in many ways, unexciting.

So, while we have several ACM members in our company, we could easily double individual membership if a little more thinking were applied to the problem of making ACM a more rewarding experience for its members. When members of our staff with respectable master's degrees in computer science can't get excited about ACM, then maybe it's time for some changes.

ACM should, I believe, begin immediately to develop a strong corporate membership program. This program should be packed with interest and excitement so it will attract most of the companies in and related to our industry. I see corporate membership as an excellent mechanism for keeping companies abreast of important issues in our industry as well as potentially providing many other outstanding and valuable services.

What's just as important, the price tag on corporate membership should be as it is in many other industry groups – proportionate to corporate sales. This would encourage the smaller companies to become corporate members of ACM, let large corporate members pay a more appropriate share, and in the long run bring significant revenue into ACM, as well as making it a leader in the future of the computer industry.

If ACM is interested in developing a strong, active, exciting corporate program, I would be more than happy to volunteer my services.

Apart from corporate membership programs which could easily put ACM operating on a profitable basis, ACM should honestly try to reflect ideas, attitudes, techniques and problems of the industry at large, not a minor segment of it. At present, educational institutions and the influence of people in these institutions play a shockingly disproportionate role in the policies and practices of ACM. Although the long-range future of our industry depends upon formulating and controlling a vital educational program which produces trained scientists and technicians, computing is a lot more than education. Computing is also a lot more than government-sponsored projects.

And while the U.S. remains the world's leader in computing and is covered head-to-foot with programs and algorithms written in Fortran and Cobol, and while ANS has standardized the languages for these two behemoths, ACM merrily continues its quaint policy of developing algorithms in Algol.

Ralston's Reply

I sent all of the above comments to Carlson, and in response I received a letter from Anthony Ralston, who had just taken over as president of ACM.

He expressed agreement with my view on corporate membership and noted that he was shortly to initiate a "vigorous effort" to resurrect industrial support for ACM. He said he would keep in touch regarding any specific role I could play in this effort and solicited any specific ideas I might have.

However, he disagreed heartily with my comments on the role of educational institutions and people in ACM. Although he admitted the influence of academics in ACM was disproportionate to their membership (one-fourth the total), he felt their influence was not as great as I imagined ("For example, only 10 of 25 members of Council are academics.")

He also admitted journal articles tended to be dominated by academics and government scientists but stated this was neither by the society's choice nor desires. He said ACM was making a "strenuous" effort to attract more articles from the business and industrial areas, but said it hadn't been very successful to date. He also solicited suggestions from me on how to beef up contributions from this area.

What Happened?

About a year passed following Ralston's reply, and during that time ACM did little, if anything, to actively pursue an aggressive corporate membership program and to become an organization with wider membership appeal.

I pointed this out in another letter to Ralston, wondering why he had never been back in touch as he said he would.

I told him it was not my intention at that time (nor is it now) to foist upon him any unwelcome ideas or changes to ACM. Perhaps ACM should continue in its present orientation. If so, it would probably be important to inform its membership officially of this so it would stop hoping ACM might pursue activities which could (hopefully) underwrite an otherwise deficit activity.

As a member of ACM I have no inherent objection to its present, rather biased orientation, provided, of course, this orientation can be preserved on a sound financial basis. Judging by ACM's performance over the last few years, it seems obvious that "sound financials are not where it's at."

I also objected to his excuse for the lack of industrial articles, which was that they don't get any. The character of an organization and its publications doesn't "just happen." Even the most uninformed layman can point to trade publications and books whose normal content has a greater reader attention span than do ACM publications.

So, if ACM is attempting to reach out to the industry, then it must somehow reconcile the content of its publications with the fact that an overwhelming percentage of individuals who took the most recent CDP exam failed it!

In response to these comments, Ralston replied that he had just recently set up a committee on corporate membership. He admitted it had taken "rather longer" to get this committee started but there were "too many other immediate problems."

He noted he had begun another effort in the form of a long-range planning committee, saying it was rather shocking that ACM had never had a real planning effort in the past.

Shocking, indeed! And so are ACM's responses – classic illustrations of the bureaucratic avoidance theorem. If ACM truly wants to improve, it must change its orientation in ways which will make it relate better to the general computing community.

Gerald H. Larsen is president of Unicorn Systems Co., Los Angeles, Calif.

Viewpoint

Letters to the Editor

Taylor Blames Computers When Humans Are at Fault

With all due respect to Alan Taylor, the ombudsman of computerdom, I say, "Enough!" His windmill tilt with the Barclays Bank over the need for his mother's maiden name for a confidential ID [CW, Oct. 24] is really trivial. But when he takes up cudgels with Framingham Union Hospital over its formatting of his insurance credit, I must state he is counting gnat whiskers.

Re the misguided check sent in payment for Taylor's Blue Cross insurance premium [CW, Oct. 17]:

Once again a tempest in a teapot. Not that I do not sympathize 300% with Taylor and the complete frustration he faced at Blue Cross. But it is the National Shawmut Bank with which he should take issue. It has got to have the world's worst audit trail when its lockbox scheme merges multiple company checks via lockbox cancellations.

Taylor needs to call in the bank examiners – not fault the Blue Cross computer. National Shawmut Bank not only ought to have some means for verifying that it transferred funds to Blue Cross, but it ought to have some kind of civil suit from Taylor for causing loss of insurance coverage for the period indicated.

In short, I sympathize most heartily with Taylor's personal problems. But I believe he is faulting the wrong culprit. It's not the computer, it's the dumb bunny humans who run the overriding system which is served by the computer.

Jerrold Asher
Pasadena, Calif.

In his own way, Alan Taylor was preaching exactly the message that Asher elicits above. Taylor criticizes "computerized systems," which includes (even stresses) the human element of these systems.

Incidentally, two recent Taylor columns (Nov. 14, 21) explained that the problem was in the Blue Cross end of the system, rather than National Shawmut's. EB

Professional Practices

Societies Can Respond to Problems — With Action

By Patricia P. Watt
Special to Computerworld

In normal professional practice all of us meet problems and have to determine how they should be handled. I have recently been considering the alternative approaches to various problems that could be taken by the profession, acting through our professional societies. This is useful, I believe, as it can lead to identification of effective problem-solving for all of us.

Take the problem of the procurement of small systems. The basic problem is that the vendor/buyer relationship includes two major, related problem areas. A solution which solves one without solving the other is therefore inadequate. The problem areas are:

- The vendors sell hardware, not problem solutions. The salesmen are normally not knowledgeable about the available software or about the problem areas that can occur in obtaining a proper solution to a problem. Yet they often appear to be offering problem solutions.
- The vendors are uninterested in single sales. Normally, a problem solution for a small user comes from the modification of standard software or the creation of special software. The user who buys a single system is asked to absorb the total cost of the modification — say a driver for a printer — yet the resulting software becomes the property of the vendor.

Thus, the single user winds up paying the vendor's development costs and often is left with a product which is the vendor's idea of a more generally marketable variant of the user's specifications rather than something which is built to the user's own specifications.

So much for the problem areas. The real question is how to evaluate the various possible actions the profession, acting through its various professional societies, can take.

I see three major possibilities of such action:

- The societies could act as "amicus curiae" for small system users. This would perhaps be possible through working with the attorney generals of the various states. However, this would provide at best only a legal remedy, and no legal remedy can recover lost time, lost customers and lost goodwill for the user who is misled by the vendor's sales representatives.

I cannot, therefore, recommend this approach too highly. I would prefer to attack the problems farther back in the chain, and preferably at the vendor's expense.

- The societies could develop standards of marketing and user/communications. An example of this approach could be the statement, "Caution: The Society of Certified Data Processors Warns That Use of This Product Without Suitable Precautions May Be Harmful To Your Business," which could be attached to say a software compiler that had not been fully specified before being released.

There are problems with this method which can effectively delay the acceptance of such a proposal for so long that some quicker approach would be more productive.

- Publication of widely read articles on the problems involved. Someone needs to cut through the hardware and software jargon and actually explain to non-DP people the dangers involved in systems and how to determine whether and how well any system can meet their needs. Moreover, it has to be performed in such a way that it will receive adequate circulation — perhaps through the *Harvard Business Review*.

Whether there are any other approaches our societies could evolve I do not know, nor do I know whether my evaluation of these alternatives is correct. I do feel, however, that my own professional society — the SCDP — and the others should be giving attention to this problem of effective responses to professionally undesirable situations.

Patricia Watt is an assistant actuary responsible for DP system use.

Letters to the Editor

DP Profession Needs Specialty Groups

I find myself bursting with approval for Jim Stratton's Professional Practices article about the qualifications of the professional DP manager [CW, Nov. 7].

While the source of my income for the past 12 years has been in designing systems and programs, I find few who are "in the real world" as is Stratton. Most of the people with whom we must deal on a daily basis still believe we must live for the bit and byte, not for earnings per share.

If we are truly to develop professional status, we must establish groups within our industry to allow for our specialties, i.e. managing, programming, etc.

John F. McGraw
Southfield, Mich.

'Caveat Emptor' — Convenient Cop-Out?

This letter is in response to your request [CW, Nov. 14] for comments regarding the wording of advertising appearing in *Computerworld*. I would like to second Harold Uhrbach's comments with regard to professionalism as it concerns not only articles, but advertisements appearing in CW.

To sum it up, professionalism should begin at home and this would include professional and accurate advertising in *Computerworld*. In my view, "caveat emptor" is a convenient cop-out.

John C. Sampson
Farmington, Conn.

Management Column Timely, Appropriate

For the past several months, I have been reading with great interest Frank Greenwood's management column. I would like to compliment him on his approach to management and I feel the articles are very stimulating.

I was especially pleased with the most recent article in the Oct. 31 issue entitled "Manage Your Own Career by First Setting Goals." It is very timely and appropriate and I intend to have all my employees read it.

Gale Binder
DP Director
Topeka Public Schools
Topeka, Kan.

We Don't Bite!

Many of us have been frustrated by the shortcomings of computerized billing systems, but T.E. O'Connor's criticism of fellow data processors [Taylor Report, CW, Oct. 31] was unjustifiably harsh.

While we agree with his observation that "the people who program, operate and feed the computer software most certainly are not fail-safe," none of us appreciates his accusation that "we are frequently careless, stupid and sometimes vicious!"

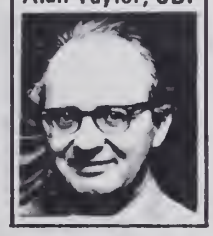
To the contrary, we consider ourselves normally conscientious, reasonably intelligent, and so far we haven't bitten anyone on the hand.

J.H. Tarrant
Union Carbide Corp.
Greenville, S.C.

If Unreliable Output Is to Be Stopped

DP Professionals Cannot Afford to Be Tolerant

The Taylor Report
By
Alan Taylor, CDP



If data processing professionalism exists as a tangible, distinct entity, then it must be distinguishable from data processing science and the data processing industry. Historically, it is possible to distinguish between these three components, all of which use a single body of knowledge, by noting the items which are considered unethical in the separate sectors.

In the industry, for instance, it is permissible to profit from trade secrets, thus preventing the free flow of knowledge. This practice separates the trade area from the scientific area.

It is also possible without being unethical to urge specific use of proprietary items, such as particular formulations or particular brand names for the same formulation in preference to others, in defense of one's own profit. This is not permitted for a professional physician, for instance, and so this practice separates the trade from the profession itself.

Similarly, the scientific area involved in creating and maintaining the body of knowledge has a duty of tolerance, as well as publication. This area of tolerance prevents the scientist from obstructing the free flow of knowledge, but also prevents him from forbidding the free flow of information other scientists believe is misinformation or in error. The scientist, moreover, is not required to use the knowledge he creates or that others produce and publish; he does not even have a duty to know about recent developments that can affect his own theories.

Profession Must Be Intolerant

The professional, unlike the scientist, is not permitted to be either inactive or tolerant. His duty is to see that all those who receive professional aid obtain reliable aid — not just to see that those who come to him personally obtain what he thinks is good for them.

Malpractice by a professional is not forgiven just because the practitioner honestly believes in some recognized remedy, any more than it is forgiven because he is financially involved with the remedy's owners, or because he felt like conducting some scientific experiment. Malpractice is something to be energetically rooted out throughout the profession, and the onus of proof is placed upon the practitioner in case of any doubt.

Moreover, the intolerance of the professional spreads further. It also limits the degree to which the paraprofessional areas — the trade and the industry — are to be allowed to carry out their own functions as they see fit.

> *"It is our professional responsibility to see that all computer output is reliable and to be intolerant of anything and anybody that significantly interferes with the achievement of this aim."*

The right of trade secrets should be swept away from the industry if it results in a practitioner being given misleading or inadequate information upon which to base his judgments. To permit trade secrets to limit the quality of the judgment appears to be reducing the reliability of the final professional aid and is therefore not to be tolerated.

Equally, the right to develop new knowledge should be limited if it results in an unreliable service, effectively making scientific experimentation subject to the duties of general practice. Thus, the rights and duties of the other areas are made to serve the basic professional duty of providing a universally reliable service.

Data processing has yet to define just what universally reliable service it is aiming to provide, in order to permit it to claim real professional status. In my opinion, the service concerned is the supply of reliable information, and our professional responsibility is to see that computer output is reliable.

If this is our aim, and if we are to be a genuine profession, it follows that we, the practitioners rather than the scientists or the traders, should set the rules for what behavior is and is not to be tolerated, both in our own area and in the areas where the conduct of trade or science can result in the unacceptable reduction of reliability in computer output.

It is our professional responsibility to see that all computer output is reliable and to be intolerant of anything and anybody that significantly interferes with the achievement of this aim.

Such an aim is the minimum aim to which data processing should aspire. But it is necessary. The use of computer output assumes the output really is meaningful, while as any practitioner knows, the meaning, if any, comes only as a result of stringent care on the part of all concerned.

The transformation of data — which is simply so much clay in the hands of engineers and programmers alike — into something that deserves to be called information is an error-prone business and one that needs protection before even the amount of reliance currently placed upon it is really justified. Yet, in the future, the value of pro-bono-publico services to society in general has so much to gain for everyone that our reliability, and the general belief in our reliability, must be increased rather than be allowed to remain at its current level.

If we adopt such a professional aim — the protection of the reliability of all computer output — then there are certain other aspects which have to be considered with regard to the basis for professional and unprofessional behavior. These will be discussed in a future article.

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Letters to the Editor

Language of Attack On Codasyl Disputed

In a recent issue of *Computerworld* Dr. H.R.J. Grosch, the editorial director, published an editorial that should arouse every responsible data processing professional to protest.

The purpose of the editorial was an attack on Codasyl. Whether Codasyl needs attacking is immaterial here. The significant issue I wish to raise is Grosch's method and language.

Grosch accused Codasyl of changing and in many cases debauching the "poor dumb language" of Cobol. Grosch is convinced that Codasyl's motivation has degenerated to nasty commercialism, and that representatives of the software and hardware outfits now run Codasyl to protect their company interests.

He gives no evidence that hardware and software outfits do indeed run Codasyl, and he does not support his grave charge that these entities have perverted their trust for business reasons.

Grosch then contends that a sure sign of corruption of purpose is secrecy and elitism in administration, but does not attempt to prove that contention, nor does he document its applicability to Codasyl. Privacy of debate, not secrecy, assures that the computer community will not be confused by that debate, but instead, will focus its attention on the finished work of the committee.

Grosch closes his editorial with an appeal to Motherhood, the Flag and Cobol Standards. This is great smoke-screening, but it does not hide the basic lack. An outspoken opponent, his malicious and "groschly" misstated allegations, unsupported by fact, are an abuse of his stature in the field of computer science. His choice of language ("...outfits that now run Codasyl want to screw up the language and its users...") is an abuse of journalistic responsibility and editorial privilege.

The intrinsic conflict of the editorial, namely that Codasyl fathered Cobol, that the original Cobol was a good thing, but that Codasyl should have been drawn and quartered in the early Sixties (the Cobol standard was brought out in the early Sixties [1968, HG]), is enough to discredit the editorial. The remainder of the article, because of its lack of facts, its inflammatory language and the grave nature of its charges, can only be described as a diatribe which seriously discredits Grosch and his professional stature, and which implicates by association *Computerworld* as well.

I believe that *Computerworld* should follow the lead of other organizations in the field and act to stop Grosch's unconscionable frothing, and I personally urge Grosch to work to return to his previous position of respect and influence in the information processing community.

G.W. Carter, CDP, RBP
Dallas, Texas

The attack on Codasyl was not in a formal CW editorial, Mr. Carter, but in my highly personal column of opinion. It reflected 12 years of first-hand observation, a dozen published diatribes, hundreds of snide notes and speech asides.

One of my major defeats at the Bureau of Standards was the infamous "Floor Equals Ceiling" debate, in which 50 out of 52 user and vendor organizations hooted down my proposal that the Feds not procure Cobol compilers containing non-standard extras.

(Continued on Page 13)

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Letters to the Editor

Institute's Mission Is to Get Involved

Now that the jockeying and inner squabbling during the organizing period has ended with the establishment of the Institute for the Certification of Computer Professionals (formerly the Computer Foundation), let us hope the 10 participating societies can work together in a spirit of harmony and dedication to the task of certification and education.

The officers elected to the executive committee in the first official meeting were among those society representatives who labored the hardest to make the institute a reality.

President John Swearingen and Vice-President Fred Harris were involved in the Computer Foundation idea from the very beginning. Secretary Paul Pair of Aids was also an early advocate of the institute. The treasurer is Bill Eick. Harris served on the legal and organization subcommittee. Swearingen, Harris and Eick were also among the institute incorporators. The executive committee members have proven their dedication and ability to get things done.

I see this as a time when we must ask ourselves, "What have we done for our profession? Do we really care? What have we done to update ourselves?"

Several facts stand out:

- The Institute for the Certification of Computer Professionals does exist.
- The member organizations are interested in betterment of data processing professionals.
- The executive committee is tried and true.

Our assignment, should we accept it, is to get involved. Each in his or her own way. Getting involved means investment of time and money, not just getting out for a social night. It has been said that unless we get involved we may self-destruct.

R.E. Sennet
Bartlett, Ill.

Better Coding Now!

Re the article on the Cobol Clinic [CW, Nov. 21]:

There are many small shops like ours that do not have the time to test coding techniques and must rely on word-of-mouth and hearsay. It is extremely helpful to see confirmation of better coding ideas in print.

We are looking forward to future articles on the Cobol Clinic.

F.E. Banks
Systems Manager
The Hanna Mining Co.
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COMPUTERWORLD

Language Disputed

(Continued from Page 12)

How can you say, "Whether Codasyl needs attacking is immaterial"?

How can you advocate private debate, leading to "the finished work of the committee," a *fait accompli,* and yet complain about my charge of elitism?

If I *have* any "influence in the information processing community," it's because I've called the plays as I saw them, loudly, repeatedly, frankly. When I see crook, I yell "Crook," whether it's an individual, a committee, a manufacturer, or a conceptual rip-off. "Improving" standards is such a rip-off. HG

Credit Moratorium Set

NEW YORK – A new law requiring creditors to mail billing statements at least 15 days prior to the payment date will guarantee New York State consumers a "moratorium" of at least two weeks before incurring a service charge. The law will take effect Nov. 1, 1973.

"The new law will eliminate another annoying and costly credit practice – the imposition of unwarranted service charges where the lateness in payment is not due to any negligence on the part of the consumer," New York Attorney General Louis J. Lefkowitz said. "Given adequate time, I am sure most consumers who wish to avoid these service charges will now be able to do so," he said.

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dawn of a new era

X3 Moves on Basic

WASHINGTON, D.C. – A formal standard for the Basic programming language will be defined by a technical committee being organized under American National Standards Committee X3. The new committee, X3J2, will be chaired by Dr. Thomas E. Kurtz, director of Kiewit Computation Center at Dartmouth College and codeveloper of the original Basic language.

The first organizational meeting of X3J2 will be held here, at the CBEMA building, Jan. 22 and 23. Interested persons, both software users and producers, are urged by X3 Secretary Robert Brown to take part in the standardization effort.

The prime purpose of X3J2, as defined by X3 in launching this project, is to standardize the elements of Basic that will meet the "existing and future needs in computing for both academic and industrial institutions."

The time-sharing aspects of the language should be particularly emphasized," X3's ground rules said, "without neglecting the value of the language for batch work, text-editing and simulation-type programming. Standard Basic should be modular to be usable on all sizes of computers and for all types of programming, Brown noted.

People interested in working with X3J2 should contact Kurtz at Dartmouth College, Hanover, N.H., 03744, or Brown at CBEMA, 1828 L Street N.W., here in Washington, 20036.

Monthly Tells Pros, Cons

Simulators Set Selection Stage

By Don Leavitt
Of the CW Staff

PHOENIX – Perhaps the most important thing to remember about the use of commercially available simulation systems such as Case, Scert or SAM is that these packages – as with any simulation – will not necessarily produce precise answers in terms of system utilization and timing.

Rather, according to the November issue of *EDP Performance Review,* these packages offer the user a way to evaluate the relative merits of various options in configuration design, scheduling and program design. The emphasis with simulation is on future planning, editor Philip C. Howard noted.

Whatever the specific purpose of a simulation, he added, it cannot be used without considerable commitment in terms of both dollars and people. With the proper support, however, a simulator can pay off handsomely, especially if it steers the user away from the wrong choice.

As with any software-based system, simulation projects have well-defined development cycles. The purposes of the project have to be clearly spelled out since the simulation process is based on mathematical calculations and slight variations on input specifications may cause great variations in the final outcome.

User input to the simulation consists of workload definitions, configurations to be simulated and scheduling data. Performance characteristics of the proposed hardware are usually "built in" to the model, but in some cases it is possible to externally define characteristics of special devices or software.

A relatively new feature of some simulations, Howard went on, is the capability to accept monitor or accounting data from current work as input to the model, thereby cutting back the effort needed to define current workloads.

Execution of the model shaped by the input specifications may occur in several phases, depending on the particular package used, with intermediate results or diagnostic messages to aid the analyst in his effort, the *Review* continued. Once the results are in, the user then must determine the effectiveness of the run.

The analyst must decide whether improvement of his input is possible or if other configurations are to be studied. If the answer in either case is "yes," a feedback cycle of modifying input, running the simulator and studying the new output is set in motion.

Final decisions may be made based on the results of several "successful" simulations, but ordinarily these must be factored into a more comprehensive decision process, depending on the overall purpose of the project, Howard noted.

EDP Performance Review is a monthly publication that devotes each issue to a particular aspect of performance evaluation. Typically, the November issue describes Scert, Case and SAM in detail in addition to talking through the pros and cons of the simulation process.

Annual subscription price is $36 but single copies cost $3, for subscribers, and $5 for nonsubscribers. The *Review* is published by Applied Computer Research, 8808 N. Central Ave., Suite 298, 85020.

IBM VS the World: That's How It Is

WHITE PLAINS, N.Y. – To gain whatever enhancements IBM may put into its program products for the System 370, users are going to have to move into virtual storage operations. That much became even more evident recently with IBM's announcement of Generalized Information System/Virtual Storage (GIS/VS) and VS Basic, both scheduled for release in mid-1974.

VS Basic is said to address the problem-solving needs of a broad range of users through arithmetic capability in short- and long-precision, allowing arithmetic operations on variables and arrays, and through character-handling capabilities that permit different character lengths and the ability to search character strings.

The interactive support package also includes array-handling operations for both numeric and character-oriented one- and two-dimensional arrays, and record-oriented file facilities that allow record processing in direct or sequential fashion. These facilities use Virtual Storage Access Method (Vsam) for direct files.

VS Basic in TSO

VS Basic is designed to operate in a TSO environment under OS/VS2 or in CMS mode under VM/370, and as a batch compiler under OS/VS1, VS2 and DOS/VS.

GIS/VS, an upward-compatible version of GIS/2, supports a wide variety of applications by providing information-handling capabilities against many typical data base organizations. It includes, an IBM spokesman noted, the potential to interface with IMS/VS operations.

GIS/VS consists of a basic query system, for information retrieval, and three separately orderable features.

The advanced query feature includes teleprocessing support and DL/I query support for IBM/VS linkups. The Modify feature allows the user to alter fields and files as required, while the Update/Create feature supports file building and maintenance operations.

VS Basic will be available in June 1974, under license agreement, for $340/mo, while GIS/VS will be available a month later for license fees ranging from $800/mo to $1,700/mo.

JOL High-Level Coding Replaces JCL

SYDNEY, Australia – "Hand-made" and error-prone Job Control Language statements can become a thing of the past for IBM 360/370 users with the availability of the Job Orientation Language (JOL) package now being marketed by International Programming Pty. Ltd. (IP).

Normal JCL "requires a level of sophistication not commonly found in the programming world," IP said. JOL gets around that problem by adapting the characteristics of high-level language to operating system control.

Simple, free format JOL statements invoke functions which normally would require extensive and carefully tailored JCL statements. Key words are frequently used and, conceptually, JOL bears the same relationship to JCL as Cobol does to Assembler, a spokesman went on.

Specifically, JOL provides instructions and facilities for:

- Defining programs, datasets and symbolic parameters.
- Executing programs.
- Altering file status, including both scratching and cataloging.
- Operator communications.

The use of JOL results in a reduction of the amount of operating system overhead which normally accompanies the interpretation and execution of JCL, IP said. The package includes optimizing procedures that minimize the number of job steps to be initiated.

JOL will produce a JCL equivalent which is at least as good as that which could be coded by a conscientious systems programmer, the company claimed, but the syntactical structure of JOL means that even an inexperienced programmer can quickly learn enough to submit relatively complex jobs.

JOL also includes procedures for checking the internal logic of proposed job streams and supports a procedure library facility so that established job streams can be stored and modified at execution time.

JOL was originally in PL/1 but is now written in Assembler to fit in less than 50K of memory.

IP has marketing rights here and in New Zealand but has indicated that support for users in other areas such as the U.S. can be arranged "according to each organization's priorities." Prices may vary depending on support needs.

IP is at 123 Willoughby Road, Crows Nest, N.S.W. 2065.

'Jasper' Charts Show DOS/VS Use

NEW YORK – A new version of the Jasper job accounting package is available from Datachron Corp. to provide user billing, system utilization reporting and analysis of job, operator and component performance for IBM 370s being converted to or already running under DOS/VS.

Jasper-VS includes a facility by which users can compute a paging constant for each user program. This constant can then be used to determine the extent of job degradation due to excessive paging, particularly when a program has been run in both a "real" and a VS environment.

The new Jasper version has extended the previously available histograms to show the use of peripheral units in all five partitions supported by DOS/VS.

The usage is charted in six-minute segments and even shows when a device has been used by multiple partitions in the time segment. Jasper-VS, written in BAL and ANS Cobol, costs $1,995, and is distributed from 174 Fifth Ave., 10010.

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"Voice & Data Markets" – an historic business conference on the use of private line communications networks – Friday, Dec. 14 – Essex House – New York City – 9 a.m. to 4 p.m. – Registration fee: $150.

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'Tag' Tempers Terminal Tasks

NEWFOUNDLAND, N.J. – DOS and OS/360 users can develop terminal-based programs "in a manner as simple as RPG, as self-documenting as Cobol and as efficient as the most carefully coded Assembler" with the support of the Teleprocessing Application Generator (Tag) package from BSS/ICC.

TAG was designed to support the data manipulation and data management functions required in many teleprocessing systems, the company said. The present package is a verb-oriented language with single statement power to perform such operations as delimiting complex input character strings from terminals.

Beyond that, however, it is also capable of creating, updating and retrieving multiple data bases via either relative or indexed addressing schemes. TAG also provides support for both logical and arithmetic operations on the data under its control, a BCC/ICC spokesman noted.

The package also includes the means by which users may format output going to various terminals, utilizing features available on the different units. All TAG programs handle resource protection, the spokesman added, and they are self-relocating in form so they can use whatever DOS partition is available at LOAD time.

TAG supports both multiprogramming and multitasking operations, but the system itself is transparent to the user, the company said.

The package can function in a DOS/360-370 partition as small as 20K, while space required under OS is determined principally by the size of the I/O initiators.

BCC/ICC is prepared to support installation and use of TAG "anywhere in the U.S.," but the package is very nearly "self-installing," the spokesman explained, if the user follows instructions provided with the program.

TAG is available for a one-time charge of about $5,000 for both DOS and OS shops. Lease and rental plans are being formulated, the company said.

BCC/ICC is at 50 Allison Ave., 07435.

'Case-Sim' Aids Finance Studies

SILVER LAKE, Ohio – An enhanced version of IBM's Planning Systems Generator package, Case-Sim is a case problem simulator for large 360/370 systems now available in source language – Fortran IV and BAL – from R. Clifton Young & Co.

The package allows financial analysts to build sophisticated corporate models and budgetary control systems through the use of sets of two-digit calculation and projection codes. Regression analysis and other forecasting techniques are similarly available to the non-programmer user through sets of predefined codes, the company noted.

Case-Sim also provides report formatting and generation facilities to the same user. Standard formats and graphic support are prepackaged but users have the ability to define any layouts they want, Young said.

Several versions of the system are available for use in batch, remote-batch and time-shared modes. The package can be run in a 100K partition with overlays so it can be used with larger DOS-based configurations, the vendor added.

Short-term leases range from $100/mo for most versions to $300/mo for a TSO implementation.

Young is at 1388 Crystal Lake Drive, 44224.

'Ecube' Plans Energy Uses

WASHINGTON, D.C. – In an effort to save some of the nation's energy resources, the American Gas Association (AGA) is sponsoring a group of programs to help engineers and architects design energy conserving systems into new buildings.

Ecube (Energy Conservation Using Better Engineering) is available nationwide through the Control Data Cybernet timesharing network at standard rates.

The system is an integrated series of energy analysis programs that allows designers to examine three sets of basic statistics: energy requirements; equipment selection and energy consumption; and an economic analysis of the various alternatives.

Basically the Ecube system allows the designer to examine the effects that different designs will have on the energy use within the structure over its expected life.

And "the potential reduction in energy consumption during the life cycle of a large building (approximately 50 years) is estimated as high as 50%," according to F. Donald Hart, president of the AGA.

The system performs three basic functions, according to Hart.

First it performs the energy and financial analyses needed by designers to evaluate alternative energy techniques.

Secondly, it serves as a resource base of information for energy-use financial analysis.

And finally, it also helps energy users make decisions consistent with conservation and environmental goals.

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3d-Party Lease Lacks Safeguards of Vendor Pact

By Thomas E. McCormick
Special to Computerworld

Although the costs of leasing some computer equipment from a leasing company compare very favorably with the costs of renting or leasing directly from the manufacturer, a third-party computer lease is more risky.

In this series of articles on the risks involved in third-party leasing contracts, the author lists informative hints, pitfalls, suggestions and practices all users considering such leases should consider.

Computer manufacturers' standard contracts are usually quite strict, but very often not rigidly enforced. Third-party contracts often provide some desirable terms for customers, such as attractive monthly rates, no overtime charges and price protection beyond six months, but they do not provide some of the safeguards which computer users have come to take for granted because of manufacturers' generally lenient practices.

The manufacturers can guarantee delivery dates; they can accede to last minute extensions of installation; and they can provide professional preinstallation planning assistance, even though these items may not be provided for in their contracts.

These considerations are attractive to users and account for generally higher prices charged by those manufacturers.

What About User?

Third-party standard lease contracts protect the leasing company quite well, but usually do not provide very much protection for the user, or assure a high level of service, unless the user specifically requires it in the contract. If a problem such as non-delivery arises, the user should not expect the leasing company to be able to react as quickly as a manufacturer.

The contract should spell out the commitments of each party, and the penalties for non-compliance. Such commitments should include those services and practices which manufacturers engage in even though not bound to do so by their contracts.

Because of the sizeable amounts involved in computer rental and the serious difficulties associated with any prolonged disruption of a computer's availability, it is important to negotiate detailed contracts when dealing with third parties.

Verbal promises may prove very difficult to enforce, and are frequently met by a standard contract clause stating that the written terms recite the entire agreement. The user should require vague or ambiguous terms to be rewritten clearly.

Lessees should beware of provisions which are "subject to" something. For example, some contracts promise prompt delivery "subject to" availability. This means that if the leasing company has the equipment, it will send it to you. Since you are usually committed to the removal of equipment at the same time you install replacements, you may not get one or more vital parts of a system, if the current lessee requests an extension of installation of equipment which was scheduled to be moved from him to you.

Part II will discuss lengths of contacts, automatic extension of contract period and monthly lease periods.

(Thomas E. McCormick spent several years with IBM as a sales representative before becoming director of computer operations at the Seidman & Seidman National Computer Center.)

Step by Step Before You Sign

Here is a recommended sequence of steps for entering a third-party computer leasing contract:

1. List machines and features needed in detail.
2. Define contract terms as you would want them.
3. Review with a consultant or another EDP user. Develop firm equipment specifications, and specify desired length of lease for each item.
4. Request quotations after equipment specifications are firm. Have lessors include copies of their standard contracts for your review.
5. Check references of vendors. Verify that satisfactory maintenance is available in your location.
6. Negotiate with vendors until terms are resolved. Get everything in writing.
7. Obtain legal review before signing the contract.

Vendor

3d-Party

You'll never be anxious about a Talcott Computer Leasing contract. We believe in tailoring it to a customer's specific requirements. Clearly spelling out all the details. And then living up to it.

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Sure manufacturers say they guarantee delivery dates. But they also miss them. We don't. Talcott Computer Leasing hasn't missed a delivery date yet.

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These comments on Mr. McCormick's recent article are by Truman Rice, President, Talcott Computer Leasing, 1290 Avenue of the Americas, New York, N.Y. 10019. (212) 956-4123. Member—Computer Lessors Association.

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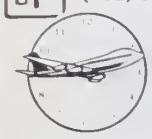

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Printouts and Priorities

'Promis' Prompts Extra-Busy Prosecutors

By Toni Wiseman
Of the CW Staff

CHICAGO – "Court processes are overwhelmed by the high volume of criminal cases, causing prosecution and court officials to resort to mass production, assembly-line operations." This, according to John Gizzarelli, general counsel, Institute for Law and Social Research, is the *raison d'etre* for Promis (Prosecutor's Management Information System).

Gizzarelli outlined the development, goals and available results for Promis at the Second National Conference on New Systems in Law Enforcement and Criminal Justice here.

The system's main objective, he said, is information storage and retrieval used by the urban prosecutor's office to identify "top priority" cases. Each case is automatically rated according to standardized criteria about the gravity of the crime and the defendant's prior criminal record.

Each day a calendar is printed, listing the cases according to seriousness. Of some 100 cases listed each day, the top 18 to 20 are retrieved and marked for top priority handling, investigation and preparation.

System input comes from three sources: the police department, the prosecutor or district attorney and legal paraprofessional personnel.

Conviction Rate

The conviction rate for "top priority" cases runs 25% to 30% higher than in other cases, Gizzarelli said, because the resources needed for convictions in all cases are simply not available.

In addition to case evaluations, Promis supplies:

- Specialized case study printouts and scheduling for court experts.
- A list of fugitives for the Metropolitan Police Department.
- Case scheduling for attorneys and judges.
- Case scheduling and rescheduling for the prosecutor's office, listing witnesses by name, case number, address and phone number.

Lack of Cooperation

Promis has confirmed some views on weaknesses in the court system. Prosecutors are generally aware that they lose large numbers of cases because of poor cooperation from witnesses, Gizzarelli noted, and Promis-based studies show that as many as 30% of all cases are dismissed on that basis.

Promis provides a criminal history update to police criminal information systems on a monthly basis, so arrest records include a final disposition.

The system has also developed a modus operandi (MO) file for the police. Data on sex and narcotics offenders' MOs, such as address, alias, race and age are available. In addition, Promis provides criminal statistics to the jurisdiction clearinghouse.

Promis is now written in PL/I, but is being reprogrammed in Cobol. The system is also being modularized for smaller jurisdictions.

The Institute for Law and Social Research is at 1025 Fifteenth St., N.W., Washington, D.C. 20005.

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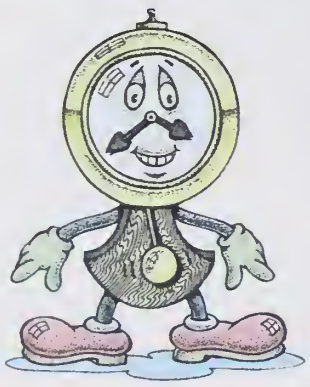

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Sherry Says...

The Data Communication Forum

House calls may be a thing of the past for family doctors, but they're an everyday event for the field engineers in Bill Frala's ICC Customer Support team. Bill knows that an ailing data communication system just can't wait for "visiting hours", so he offers 24 hour on-call service. If the problem can't be cured by phone consultation, ICC customers can order on-the-spot T.L.C. for their systems.

▪ I've decided what to send my friends in the communications industry for Christmas. It's Bruce Howat's "Great Moments in Communication". This book is a biggie!

Oldies But Goodies
Some of the early models of ICC modems have been in use for so long, they'll soon qualify as collectors' items. Of course, Matt Kenny and his sales troops won't let that happen. They're showing our customers the advantages of the newer ICC modems that offer all kinds of great features. They're in our latest catalog. Why not send for a copy.

ICC If you have questions or topics you would like to see in our column, send them to: **"Sherry Says" c/o: International Communications Corporation**
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COMMUNICATIONS

Data Briefs

'Cope' Control Unit Centralizes Testing

DALLAS – Harris Communication Systems, Inc. has announced a central network management control system to monitor and test communications circuits.

Called the Cope technical control system, the modular unit is intended to serve as the focal point for the user's testing equipment and can accommodate a variety of testing devices.

A 12-circuit system with a minimum amount of testing equipment would cost $6,500, with delivery in 60 to 90 days from the firm at 11262 Indian Trail, P.O. Box 44076, 75234.

GTE Lenkurt Adds Modem

SAN CARLOS, Calif. – GTE Lenkurt, Inc. has announced the addition of a type 261A data set which uses synchronous duobinary encoding and FSK modulation to transmit and receive data at 2,400 bit/sec.

Operating over a type 3002 voice-frequency channel, the 261A is end-to-end compatible with existing type 26C-30016 data sets equipped for the same function. It is particularly suited for full-duplex point-to-point, and half-duplex multi-point polled applications.

The 261A is priced "significantly lower than its predecessor," the 26C, which costs $2,000, according to a company spokesman. Deliveries will begin in April 1974 from 1105 County Road, 94070.

CSMA to Meet in St. Louis

WILMINGTON, Del. – The Communications Systems Management Association (CSMA) will hold its Third Annual National Communications Week Convention and Exhibition in St. Louis Feb. 19-22.

Communications user panels are set for such topics as advanced communications systems management-analysis, implementation and maintenance; and justification and implementation of interconnect.

Communications specialists will also speak on the role of consultants in communications systems design and management; the role of publications in the communications industry; the regulatory process; and university programs in communications management.

Further information on the convention is available from CSMA headquarters at 1102 West St., Suite 1003, 19801.

Modular Course Available

WAKEFIELD, Mass. – Edutronics is offering a modular data communications course to teach data communication network applications, hardware, design, programming and operation.

The modules cost $250 each, with several lease plans available from the firm at Lakeside Office Park, 01881.

Also Supports Start/Stop Devices

'Arts' Runs DOS 2260s Without Btam

By Ronald A. Frank
Of the CW Staff

PHOENIX – A software package that allows IBM 2260 CRT and other terminal users to operate under DOS without Btam has been developed on an after-hours basis by a programmer here.

The Automatic Remote Terminal System (Arts) program also allows users with the Tape Operating System (TOS) to utilize 2260 terminals, according to Charles Downs, the developer. This capability is not available from IBM, he said.

By eliminating Btam under DOS, Downs estimates users can reduce their memory requirements by at least 3K of storage depending on configuration.

In addition to supporting local mode 2260s, Arts can be modified to support any start/stop terminal including TTYs and 2740-type devices. Arts will operate with 360/25s and up under DOS and Downs is currently working on another version that will work with OS. In addition, an upgrade planned for next spring will include support for remote off-site terminals, he said.

Arts can be used with applications programs written in PL/1, Cobol or Assembler language and is referred by standard CALL statements. Teleprocessing support need not be specified in the user-tailored supervisor, thus allowing the user to specify an 8K system to support the displays in a "tight core environment."

Any number of CRTs can be used in an Arts terminal system and the number of terminals need not be specified within Arts, but instead is a function of the application program at object time.

The package supports existing operations for the local 2260 mode including read, write and buffer instructions. Monitoring can be invoked for a specific display which then allows observation of all operations on any other display units in the system without inhibiting the programmed use of the monitor.

Three operating system control functions are provided when a terminal becomes inoperable. These include the ability to declare a terminal "down" except for the built-in maintenance function TERMINAL TEST; the ability to restore a 2260 that is down to normal operation under control of the application program; and in the event of hardware problems, the ability to exchange the standard assignments of two displays under program control, preventing lost time to the entire system.

Buffering is very flexible and is set up by the user; all interrupts are serviced immediately until the buffer pool is full. When additional interrupts occur they are flagged as pending and are serviced as soon as a buffer element becomes available. Priority of the buffer elements is on a first-in, first-out basis, Downs said. On-line terminal tests have been included by entering ENG TEST on any display, including units classified as down.

An Arts module can be assembled by the user depending on the features required. The basic module requires 1,744 bytes, while other feature requirements range from 944 bytes for buffering to 273 bytes for the monitor feature; the control functions take 144 bytes.

The package costs $5,000 and is available from the developer at 3934 East Laurel Lane, 85028.

Datapoint Upgrades Intelligent Terminal Line

By Patriek Ward
Of the CW Staff

SAN ANTONIO, Texas – Datapoint Corp. has upgraded its intelligent terminal line by adding a unit with 4K or 8K random-access memory (RAM) memory at the lower end and by announcing plans for a 16K- to 64K-byte unit at the top end for stand-alone or remote multi-station or multi-function processing.

In addition, the firm's 2200 terminal has been enhanced to allow use of dual standard Ecma-compatible cassette drives with record search of 8,000 char./sec. The 2200 costs between $195/mo and $292/mo on a two-year lease.

The Datapoint 1100 consists of a processor with 4K or 8K RAM memory, dual cassette drives, 80 char. by 12 line display and full Ascii keyboard.

Besides its on-line or off-line use in dispersed data entry and processing systems, the 1100 can offer remote batch terminal support for IBM 2780, Univac DCT 2000 and CDC UT200 emulators, the firm stated.

The 1100 is upward-compatible with the 2200 series.

The unit will cost $138/mo on a three-year lease. First deliveries will be in January.

Faster Than 2200

The Datapoint 5500 can be used for local stand-alone processing or remote functions, the firm stated. The unit employs memory segmentation, hardware relocation, string and arithmetic instructions to achieve a process speed three to four times that of the 2200, Datapoint stated.

The 5500 also contains display, dual cassette drives and a keyboard compatible with the 2200, the firm said. A multi-programming operating system allows the 5500 to carry on multiple simultaneous operations.

The 5500's four simultaneous partitions can accommodate up to 32 terminals, a spokesman said.

The 5500 will cost "two to three times" as much as the firm's 2200 line and should be available by the third quarter of 1974, a Datapoint spokesman said.

Datapoint has disk, tape, printer and synchronous and asynchronous communications equipment for its 1100/2200/5500 line.

Software available for use with the peripherals includes tape and disk operating systems, emulators, RPG II, Basic, Databus, Datashare and Dataform.

Datapoint is at 9725 Datapoint Drive, 78284.

AM Adds Restaurant Terminals

CLEVELAND – Addressograph-Multigraph Corp.'s Data Systems Division has introduced two additions to its Documentor line of computer terminals for restaurants.

System 2212, designed for the fast food industry, includes one master unit with central processor, 12K bytes of memory and built-in power supply. A master unit can be used alone or can control up to four remote keyboards. It provides inventory control and variance reporting in addition to revenue reporting, cash control and sales product mix.

System 2143, designed for coffee shops, includes a master unit with central processor and 16K bytes of memory that can be used alone or to control up to three remote units. The memory can be incremented in units of 12K bytes.

The 2143 software package includes a timekeeping procedure for up to 60 employees. Other operations include revenue reporting, cash control for three drawers and product mix visibility.

Cost for the 2212 is $6,000 per master unit and $2,200 for each remote unit. The 2143 is $10,000 and each remote unit is $3,000. Delivery is three months from 20600 Chagrin Blvd., 44122.

Module Handles On-Line Testing

PROVIDENCE, R.I. – International Data Sciences, Inc. has added a bridge, monitor and power supply module for on-line monitoring, fault isolation and testing between terminals and modems.

The Model 8560 monitors each of the 25 leads in the EIA interface. In addition, the unit contains the power to drive up to 14 of the firm's Model 8501 patch and monitor modules.

The Model 8560 Bridge, Monitor and Power Supply costs $635 from the firm at 100 Nashua St., 02904.

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Increased efficiency reported with IBM's new data entry system.

Companies report greater operating efficiencies, both at centralized and remote locations, with the new IBM 3740 Data Entry System. The system uses the IBM Diskette, which can hold up to 1,898 128-character records.

"The 3740 has resulted in decidedly greater productivity in our data entry room," says Don Jenkins, manager of data processing operations for the Tappan Company's Appliance Group at Mansfield, Ohio. "Cleaner input has taken a burden off our computer and cut down on computer re-runs. Errors that might have gone undetected are caught on the visual display screen and corrected before they're recorded on the Diskette."

The advantages of remote data entry with

"Our operators like it better –and their work clearly shows it."

–Don Jenkins, the Tappan Company

a 3740 teleprocessing network were stressed by Charles Harvey, director of the corporate data division of the Noland Company at Newport News, Va. "We are a wholesale distributor of mechanical equipment and supplies, with branches throughout the Southeast," he says. "With the 3740, instead of mailing in sales reports periodically to headquarters, daily sales activity at remote branches will be transmitted to Newport News every night.

"Direct data entry from our branches means faster, more accurate input for us."

–Charles Harvey, Noland Company

Reports can then be available next morning both at headquarters and back at the branches."

"The benefits to Noland in terms of speed and accuracy of input far exceed our expectations," he adds.

Little, if any, procedural change is involved with a move from card media to the Diskette used with the 3740. Data recorded on the mailable Diskette can be sent to a central location for conversion to tape or can be read directly into an IBM System/370 virtual storage computer. This reduces the time and steps needed for communication between decentralized data entry points and a central processing facility.

The 3740 offers both single-station and dual-station keying units with low-noise-level keyboards. The single-station unit, designed primarily for remote locations, provides step-by-step operator guidance through the visual display screen.

For an informative brochure on the IBM 3740 Data Entry System, write IBM Data Processing Division, Dept. 807, 1133 Westchester Ave., White Plains, N.Y. 10604.

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Honeywell Adds Features To 7300 Bank Terminal

MINNEAPOLIS – Honeywell has announced three enhancements for the Type 7300 banking terminal system.

An optional data-capture and program-load cassette unit for use with the BTT 7340 permits local loading of terminal programs and transaction processing if temporary communications network conditions prevent loading from the CPU.

Transactions are recorded on the cassette for later transmission to the CPU either in batch mode or sandwiched with on-line terminal transmissions. A single cassette can store up to 2,600 transactions from a 10-terminal configuration.

A synchronous communication option which allows transmissions at 2,400 or 4,800 bit/sec is also available.

Honeywell has also announced the Financial Terminal Application Language (Fital) which, according to the company, is similar to Cobol. Fital eliminates the need for factory change or on-site manufacturer change for the definition and implementation of terminal functions.

Cassette unit rentals begin at $140/mo on a five-year contract; purchase prices begin at $6,860. The basic synchronous or asynchronous BTT 7340 terminal rentals begin at $230/mo on a five-year contract; purchase prices begin at $7,800.

The cassette unit and synchronous terminals will be available in December 1973, while the Fital compiler will be available in the first quarter of 1974.

Modcomp Users Get Hasp Units

FORT LAUDERDALE, Fla. – A Hasp multileaving terminal system is available jointly from Kent Computer Corp. of Houston, Texas, and Modular Computer Systems, Inc. here.

The Hasp system uses Modcomp computers operating under the MAX II/III operating systems and includes full multileaving and interleaving support.

Developed by Kent Computer Corp., the Hasp software package is currently installed and available for lease or purchase from Kent. The software system purchase price is $5,000.

Standard features of the Hasp system include transparency and non-transparency line disciplines, blank and duplicate character compression, multiple device support and full- or half-duplex transmission.

Modcomp is at 1650 W. McNab Road, 33309.

Univac Has Uniscope Printer

SALT LAKE CITY, Utah – Univac has announced a 200 char./sec single-copy printer for use with its Uniscope 100 display terminal and 610 Tape Cassette System.

The Model 800 Terminal Printer is an "electrographic" unit, Univac said, using a conductive paper technique without a toner.

The printer uses a 7 x 9 dot matrix to print upper and lower case in an 80-column format.

The Model 800 costs $1,500 or rents for $55/mo, with maintenance. on a one-year plan. Under a 60-month lease plan cost with maintenance is $44/mo.

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Bits & Pieces

Memorex's Floppy Disks Cost $.50 Less Apiece

SANTA CLARA, Calif. – Memorex's Markette I floppy diskettes are pre-initialized to IBM's 3740 format but cost 50 cents less apiece.

In preliminary testing, "more than a million passes per track were made with no discernible sign of wear," according to the company.

The Markette I is packed 10 to a box, which also serves as a free-standing, usable, mini-file.

The Markette I is available for $7.50 each and deliveries are in 30 days.

Sometimes a Fiche Reader Needs A Few Selected Accessories

HOLYOKE, Mass. – Wondering what you're going to do with that new fiche reader? National Blank Book Co., Inc. has introduced a nine-piece work station including tables, shelves, organizers, lazy susans and microfiche trays.

The basic table costs $130 from the company in Holyoke, 01040.

Versatec Drops Prices 20% On Four Electrostatic Plotters

CUPERTINO, Calif. – Four of Versatec's electrostatic plotters and printer/plotters have been reduced in price by 20%.

The Model 200 plotter has been reduced from $6,200 to $5,100; Model 200A printer/plotter from $7,300 to $5,900; Model 1100 plotter from $6,900 to $5,700; and Model 1100A printer/plotter from $8,300 to $6,500.

The firm is at 10100 Bubb Road, 95014.

Shredder Gobbles Printouts

GLENVIEW, Ill. – A half-ton of printouts can be shredded in an hour with Cummins-Allison Corp.'s Model 46 shredder. Once lead sheets go into the 16-in.-wide throat, the shredder swallows paper at up to 60 ft/min. Several printouts can be fed simultaneously to the machine which costs $1,600 with stand from the company at 830 Waukegan Road, 60025.

Fox Memory Now Doubled

FOXBORO, Mass. – The Foxboro Co. has doubled the memory capacity of the Fox 1, a medium-sized process control computer.

The enlarged memory enables the system to support larger tasks and a new communications module and software package.

The Fox 1 costs from $200,000 to $1 million from the company.

Bendix Enhances Graphics System

FARMINGTON, Mich. – The Bendix Datagrid, an all-electronic digitizing system, has been enhanced to offer incremental and absolute digitizing as standard features.

The System 1100 has two-terminal capability.

Mini and 6M-Byte Disk Heart of Turnkey Unit

HAYWARD, Calif. – By reworking its existing mini, adding on a disk drive with both fixed and removable disks, tacking on a new CRT terminal, and designing both a time-sharing-oriented operating system and a high-level programming language, Qantel has created a multiprogramming business-oriented turnkey system with up to 6M bytes of on-line storage for $29,500.

The basic CPU contains 20K of mem ry of which, however, 16K is reserved for the Business Executive System for Time-sharing (Best) operating system. The Best disk resident operating system incorporates on demand dynamic disk allocation, tree-structured, keyed data files for direct or sequential record access, directly addressable sequential data files and system-supported automatic blocking of small records in all data files.

The Quantel interactive code (QIC) language is based on standard Cobol and uses reserved words such as GOTO, PRINT, READ and STOP.

An additional 12K of memory costs $5,650, and is also available in 4K increments. The 960-character CRT terminal provides automatic right-justification of numeric fields, automatic polling capabilities and a black-on-white display format for fixed data combined with a white-on-black format for variable data.

The complete System 1100 includes: 20K CPU with 12 I/O channels, CRT terminal, disk drive with 6M-byte capacity and a 60 to 100 line/min printer.

Other options are: disk system of additional 120M bytes, up to 1,800 line/min printers, 2K character CRT terminal, Selectric terminal, tape units and card reader.

For $1,400, the System 1100, with two-terminal capability, can be converted to a System 1200 with six-terminal capability.

Qantel is presently converting its wholesale distribution and banking packages for the 1100/1200 systems.

The company is at 3474 Investment Blvd., 94545.

Correction

The Memorex 3675 double-density drive cannot be attached to any models of the IBM 360 line [CW, Nov. 28].

Datagraphix Series Has Improved Tube

By Vic Farmer
Of the CW Staff

SAN DIEGO – Stromberg Datagraphix has introduced the 4500 Series of computer-output-microfilm (COM) recorders incorporating an improved Charactron tube with intensity up to 12 times that of previous tubes.

The matrix used to project the characters is eight times larger giving crisper definition and more latitude in operation, the company said, and the controls for degree of intensity of exposure allow better quality when duplicating film.

The full upper- and lower-case OCR-B font is used on all three units in the series: the 4520, 4530 and 4550. The 4520 directly interfaces to IBM 360/30s and up, as well as 370/125s and up and costs $90,000 purchase, $1,950 rental. The 4530 is an off-line recorder that accepts phase-encoded and NRZI tapes from several systems with format controlled through use of punched cards for tape set-up and job cards for system set-up.

The more versatile 4530 costs $110,000 purchase and $2,200/mo rental on a one-year lease.

The 4550 is the top of the line off-line recorder with a 16K minicomputer to handle formatting, including titling and indexing of fiche independent of the host computer.

A solid-state, non-impact keyboard is used to handle all communications with the system. The 4550 costs $160,000 purchase and $3,800/mo. Delivery for all three units is between 90 and 120 days.

The recorders display data pages with up to 160 char./line and up to 80 line/page. The camera will record images in horizontal or vertical sequence on 105mm microfiche and in cine or comic mode on 16mm film.

Datagraphix can be reached through P.O. Box 2449, 92112.

Doubles 155's Memory

Add-On Requires Two Less Ports

CONCORD, Mass. – The 370/Stor 155 add-on memory from Cambridge Memories, Inc. doubles storage capacity while eliminating the cost of interface hardware on IBM 370/155s.

The system is also compatible with IBM's dynamic address translation (DAT), technique which allows Model 155 CPUs to operate under virtual storage operating systems.

A built-in "third port," an interconnection device, performs the function of a second storage adapter and two associated data ports required by 370/155 processors with memory in excess of 1M bytes.

The "third port" feature saves Model 155 users in excess of $83,000 in interconnection hardware when expanding above 1M byte, the company said.

The 370/Stor 155 system can be expanded up to a maximum of 4M bytes of main storage, twice the 2M-byte capacity presently available from IBM. The extended storage capacity is made possible by adding two addressing bits to the high-speed bipolar indexing memory array of 370/155 processors, the company said.

Using either VS/1 or VS/2 operating systems, a 370/155 user with DAT features can address up to 16M bytes of memory, although possessing less than one-tenth that amount of real memory.

The memory systems cost from 25% to 30% below IBM main memory units. Prices vary depending upon the size of the module obtained, and the amount of resident memory to which it attaches. However, a typical 1M-byte 370/Stor 155 memory costs $190,000, with an equivalent lease of $5,450 monthly over a three-year period.

The "third port feature" is available for a one-time charge of $4,500 for a single port plus storage adapter modification. The optional DAT compatibility feature is available for a one-time charge of $1,000.

Delivery of the first extended memory model, up to 4M-bytes, is scheduled for January 1974.

The company is at 696 Virginia Road, 01742.

Computer Automation's Minis Get 5 by 7 Matrix Printer

IRVINE, Calif. – Computer Automation, Inc. has added a 60 line/min, 132 char./line printer to its 8- and 16-bit minicomputer system peripherals line.

The basic line printer, a buffered 7-bit parallel input printer, utilizes a standard Ascii 63-character set. The character structure is a 5 by 7 dot matrix in 10-point type size.

The system will print up to 200 line/min short line.

Cost of the printer is $5,550 from the company at 18651 Von Karman, 92664.

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The latest census of general purpose systems revealed that there were 14,806 systems installed as of September, 1972, a 1-year gain of 3,569 units and $911 million in installed value. 1972 imports were over $360 million, so there is a lot of business being done by U.S. firms.

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Adds Prom to PDP-8M

Digital Expands PDP-11 Family

MAYNARD, Mass. – Digital Equipment Corp. has expanded the PDP-11/05, and brought out two configurations of the PDP-11/35 and a new PDP-8M with programmable read-only memory (Prom).

The expanded PDP-11/05 is double the former model's size in height and has 8K words of memory expandable to 28K words. Utilizing the same CPU, the expanded version contains a standard serial line interface, a full programmer's console, a line frequency clock, a power fail/restart capability, prewired connector slots for extra memory and communication interfaces, and is priced from $6,495.

The 10-1/2-in.-high PDP-11/35 with 8K words of memory, expandable in 8K increments to 128K, is priced from $9,495. The 12-in.-high PDP-11/35 begins with 32K words and is expandable in 16K increments to 128K. It is priced from $20,495.

Both PDP-11/35 configurations include programmer console with LED display and removable key for power panel lock, power supply with excess capacity to drive internal optional equipment, prewired connector slots to accept floating point and memory management hardware options.

The PDP-8M with Prom is priced from $1,760 for the 1K model and $2,240 for the 2K model in quantities of 100.

Both models employ a new nondestructible Prom, also available as an add-on in 1K increments priced at $1,250 each. The 1K Prom includes 256 words of read/write memory.

The Prom, called the MR8F, uses a technique which allows read/write locations to be spread throughout the 1K memory as the program requires. The program can be changed by erasing the Prom using an ultraviolet lamp and then reprogrammed using a programmer (blaster) available from DEC.

Price reductions up to 40% for the rest of the PDP-8 line were also announced.

Typical price reductions in OEM quantities of 100 include: a 16K PDP-8/M is now $3,328, a 40% price reduction; an 8K PDP-8/M is now $2,304, a 25% reduction; and a 4K PDP-8/M is now $2,048, a price reduction of 13%.

Bits & Pieces

Food Shops Get Accounting Unit

CLEVELAND – The Documentor computer system for reading and processing pencil-marked menu forms in coffee shops and fast food operations is available from Addressograph Multigraph Corp.

Using arithmetic and storage capabilities, totals are extended, recorded and displayed on the display cash register units, according to the firm.

The retained information can be printed by inserting preprinted forms. Reports can show gross sales summaries by clerk, sales breakdown by item, customer counts, payroll calculations and inventory controls.

Purchase prices range from $5,200 to $15,000. Lease prices range from $170 to $510/mo, excluding maintenance, from P.O. Box 3176.

PDP-12 Add-On Costs $2,850

VAN NUYS, Calif. – Users of DEC PDP-12 Laboratory Computer Systems are being offered a solid-state, plug-compatible add-on memory replacement from Signal Galaxies, Inc.

The random-access add-on promises twice the storage capacity, less power drain, wider operating margins and few parts.

Extension memory of 4K costs $2,850, 8K is priced at $4,050. Signal memory is expandable in 4K increments to 28K. All add-ons are warrantied for one year. Delivery is from 6955 Hayvenhurst Ave., 91406.

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New OEM Products

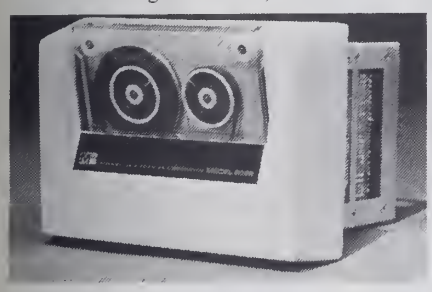
(While equipment in this column is primarily for Original Equipment Manufacturers (OEMs), in most cases it is also available in single units to interested users. Further, while much of this equipment is not presently available as such to the end user, it does give some indication of techniques and products that may be incorporated into end-user equipment.)

MDS Cartridge Tape Drive Writes on Multiple Tracks

UTICA, N.Y. – Mohawk Data Science's 2022 cartridge tape drive utilizes separate write enable lines and amplifiers for each channel which permit data to be written on one, two, three or four active tracks, either individually or in any combination.

Other features are 250 to 1,600 bit/in. recording, 30 in./sec read/write speed, 90 in./sec search and rewind speeds, fixed position dual-gap read-after-write head, interchangeable circuit cards, 23M-bit capacity, and 48 kbit/sec transfer rate.

The drives are priced at $500 for a two-track unit. The company can be reached through Box 362, 13503.



Model 2022 Tape Drive

D-57 Reads Cards, Badges

BROOKLYN, N.Y. – The D-57 optical card reader from Decicom Systems, Inc. can read up to 10 columns of Hollerith punched cards or badges, and is priced at $200.

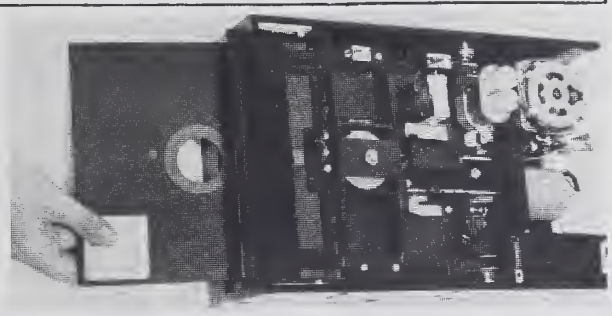
The card or badge is read horizontally, utilizing a corner cut to insure its correct alignment, the firm said.

The reader has no moving parts and consists of a sensor array, a self-contained light source and the necessary input circuitry to provide character monitoring, independent read and write clock rates and data strobe.

Decicom Systems is located at 857 Essex St., 11208.

All Typesetters Fit to Print

LOS ANGELES – Users with computer typesetting operations can obtain the new *CIS Directory of Manufacturers and Suppliers to the Contemporary Typesetting Industry* by writing to the Publications Department, Composition Information Services, Inc., 7060 Hollywood Blvd., 90028.



3740-Compatible

Using IBM or equivalent floppy disks, the Orbis 74 diskette memory offers a storage capacity of 2.46M bits using double frequency encoding in IBM 3740 format, and 3.1M bits unformatted.

Data transfer rate is 250 kbit/sec, with an access time of 10 msec/track stepped, and 10 msec settle time. Average latency time is 83 msec.

The Orbis 74 is priced at $600 from Orbis Systems, Inc. at 3303 Harbor Blvd., Costa Mesa, Calif. 92626.

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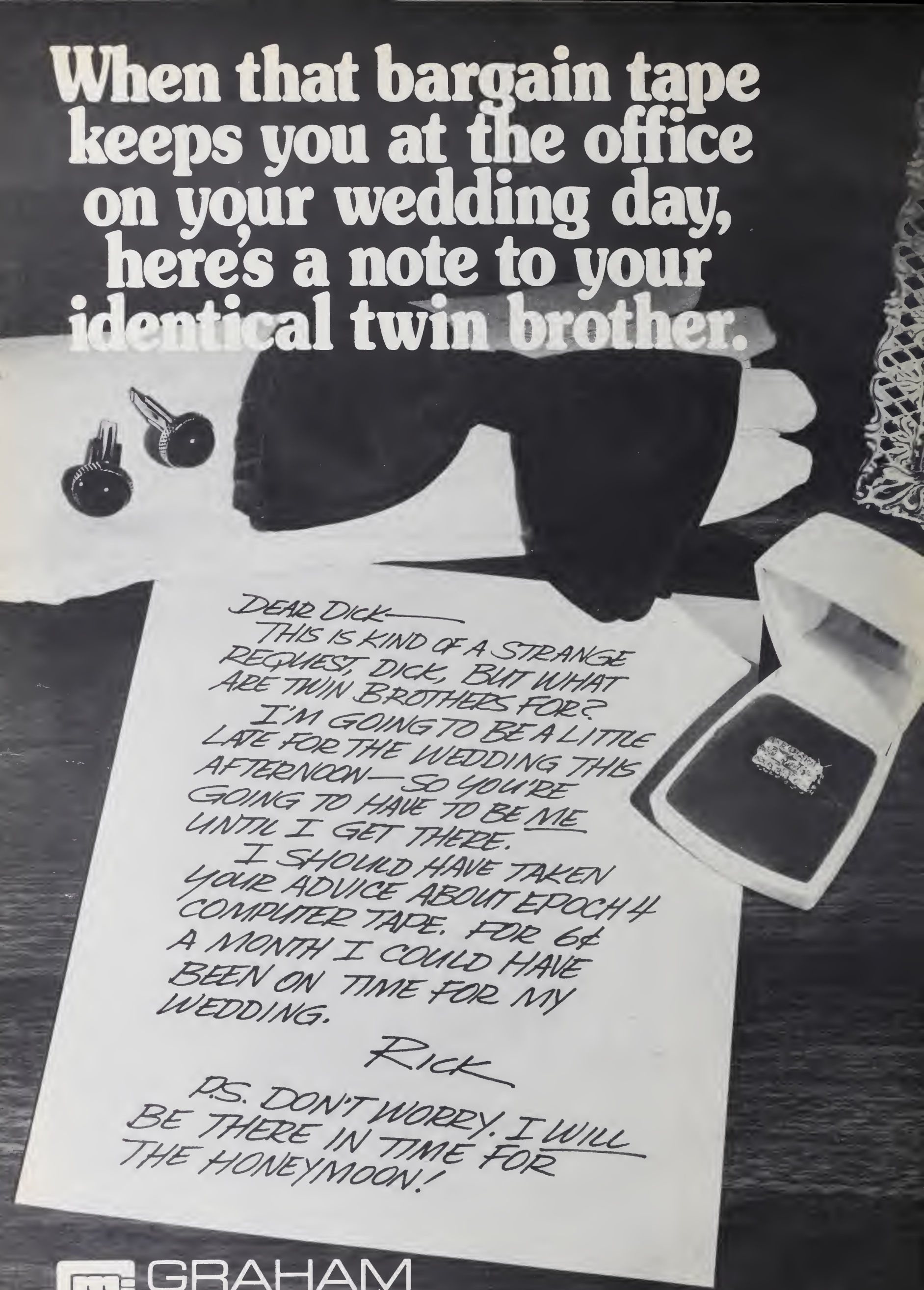
When that bargain tape keeps you at the office on your wedding day, here's a note to your identical twin brother.



GRAHAM MAGNETICS

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Proper Controls Should Merge Both Corporate, DP Interests

NEW YORK – Without sufficient controls upon the data processing area of a corporation, "the divisional and corporate interests tend to clash," according to Edward L. Hennessy Jr., senior vice-president, finance and administration, United Aircraft Corp. With proper controls, however, the two sets of goals can complement and reinforce each other, he said at a session of the "Senior Management and the Data Processing Function" conference here, sponsored by The Conference Board.

At the divisional level, DP is seen as a tool for making the operation of the business more efficient and for solving problems that are unsolvable by any other means.

The major concern is frequently with the level of service, with running and maintaining existing production programs, with producing new systems and with the handling of occasional "one-shot" DP requests. Budget is frequently superimposed on the operation as an additional input, almost as an afterthought, he said.

At the corporate level, on the other hand, the main concerns are return on assets managed or return on investment, with the consequent emphasis on cost control and on maintaining a competitive stance in the industry.

What top-level controls can be imposed to merge these two interests? Since DP is project-oriented, where projects consist of system development, one control would be to confine development to projects for which there is a good return and to control carefully the development and maintenance costs, he suggested.

In producing a new product, a firm should be concerned with criteria such as:

- Feasibility – Is it possible?
- Producibility – Can it be done with present constraints on organization, equipment and finances?
- Maintainability – Is it easily serviceable?
- Marketability – Is there a need or desire for this product? What is the demand curve?
- Salability – What is the competition? What can we sell at what price?

For top management to control DP effectively, it must also relate DP to the business procedures and business plans in such a way that the outputs from the DP department are measurable, not merely in qualitative terms such as good, bad and not enough, but in quantitative terms, he noted.

Some people are repelled by the "return on investment" concept when applied to DP, perhaps because difficulties in quantification afford a rationale for avoiding measurement. Sometimes it is hard to quantify the expected benefits; all the more reason in such cases to be cautious and to try harder for quantification of benefits before incurring the costs, Hennessy said.

This same philosophy is applicable to the lower supervisory levels of DP, he claimed. Functional supervisors are concerned with relating man-hours expended to work accomplished and with relating computer costs to computer utilization.

Similarly, departmental management is concerned with relating predicted schedules to actual schedules, predicted costs to actual costs, predicted manpower requirements to actual manpower required and so forth.

GE to Pool Its DP Into Regional Units

NEW YORK – A task force at GE has recommended a consolidation of data processing work currently being performed in over 100 locations into 14 regional centers.

The task force reviewed current computer usage at GE and recommended alternate courses of action to improve efficiency through further pooling of its computer plant, according to Anthony K. Manero, manager, Corporate Computer Planning Operation at GE.

The consolidation will be directed by Manero's group, which has been established to prepare forecasts of computer usage and plan for equipment requirements in the regional centers.

This operation will accomplish its mission by designating regional centers, assigning components to them and approving all changes in general-purpose computing equipment, Manero said. A major activity will be the establishing of standards for languages, communications and operating systems for regional centers.

Manero made his remarks to the closing session of The Conference Board's two-day meeting on "People Aspects of Managing the Development Process."

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Security Checklist

Who Has Access to Your DP Center?

TORONTO, Ont. – Is your computer installation secure? Or is it vulnerable to costly damage from the hazards of fire, floods, mechanical breakdowns, fraud and lost programs and data files?

A simple way to determine the security of your computer system is to use the following checklist of security "musts" concerning computer center access control:

- Have a single entrance to the operations area monitored by the receptionist or keep it locked.
- Install a key lock, a cipher lock or a badge-operated lock on the door to the operations area.
- Issue badges with new encoding and change locks periodically.
- Identify all keys to the operations area with a registration number, logged in a control book when issued, and marked with the words "Do Not Duplicate."
- Instruct the operations staff to memorize lock combinations rather than write them on paper to avoid compromising the security measures.
- Establish a procedure to protect the integrity of the security system if an employee loses a badge or key.
- Keep all service entrances to the computer center locked after normal working hours, attach entrances to an audible alarm which sounds if any door is opened and inspect all entrances to make sure they are secure.
- Use sensors to detect magnets and to prevent them from being brought into the computer center.
- Locate the operations control area just outside the computer room but adjacent to it.
- Protect the computer input and output areas with a glass partition, a teller's cage or pass-through window.
- Maintain a log of all deliveries to and pickups from the computer center, showing the date and time, description of the materials and employee authorization.

This checklist was compiled by DCF Systems Ltd., 74 Victoria St., Toronto, Ont. M5C 2A5.

Vote Cards Mismatched

WASHINGTON TOWNSHIP, N.J. – A pilot test here for countywide computerized voting conducted here this past election day was popular with voters but encountered a few problems at the tabulating center.

Lee W. Ranstrom, a county official, said problems in counting cards involved a mismatch of card sizes which caused the computer to skip over many of the ballots.

As a result, the ballots weren't counted until about 1 a.m., at least three hours later than expected.

County officials have not yet said whether the computer system will be selected to replace the paper ballot system currently operating in Gloucester County's 23 other municipalities.

Computerized Cross-Checks Help Fight Welfare Fraud

EASTON, Pa. – The Pennsylvania Welfare Department is using a computer to crack down on moochers.

Using a computerized cross-check system, the department checks recipients' wage reports against the report their employers file with the state Bureau of Employment. The department is now conducting an average of 7,500 checks a month as compared with a precomputer average of about 1,300, according to state Welfare secretary Helen Wohlgemuth.

In a test comparison on 500 welfare cases in two counties, the results indicated that 19% of the recipients either failed to report earnings or reported them incorrectly.

"These findings, along with other audits and studies, conclude that a significant number of overpayments occur in relation to client income," Wohlgemuth said. "The computer hookup enables an instant check, eliminating the previous delays in income verification."

Hitchhikers Are Risky Lot

TOPEKA, Kan. – There is a calculated risk to picking up hitchhikers, according to highway patrol records here.

National Crime Information Center computer checks are made on all hitchhikers arrested here and figures show about 25% of them are either wanted for a crime, in possession of narcotics or are runaways, said Kansas City Highway Patrol Supt. Col. William Albott.

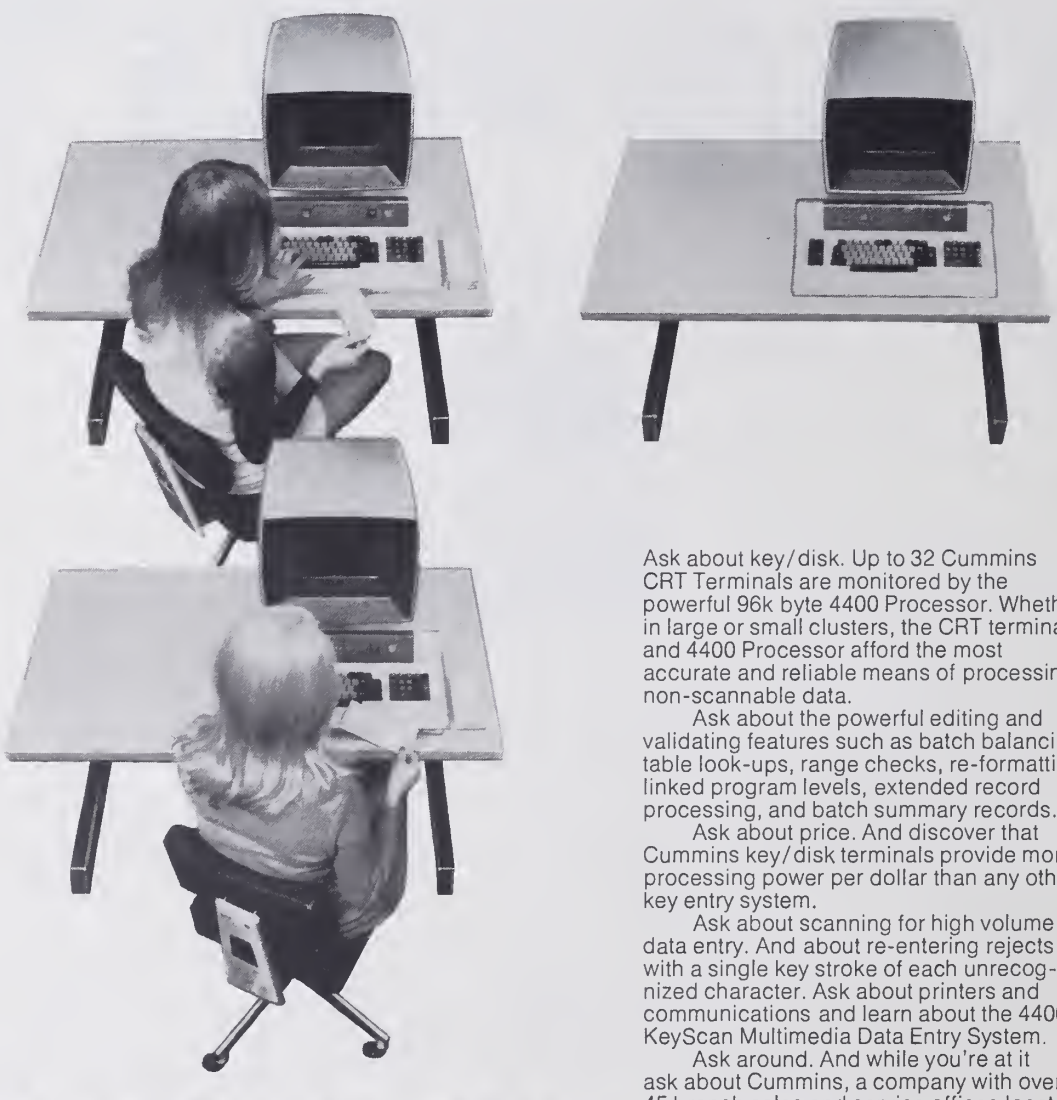
A Fair Exchange

BOSTON – Logic and practicality have been the motivating agents in a cooperative computer sharing venture between two Massachusetts counties.

A district court in Middlesex County will soon be renting a Suffolk County courthouse computer to process unpaid parking tickets.

Both counties expect to benefit from the arrangement. Suffolk County will be getting paid for the use of a computer which otherwise might be idle, and Middlesex County's backlog of about 250,000 tickets will be diminished.

When you consider key/disk... ask about the Cummins KeyScan™ Data Entry System.



Ask about key/disk. Up to 32 Cummins CRT Terminals are monitored by the powerful 96k byte 4400 Processor. Whether in large or small clusters, the CRT terminals and 4400 Processor afford the most accurate and reliable means of processing non-scannable data.

Ask about the powerful editing and validating features such as batch balancing, table look-ups, range checks, re-formatting, linked program levels, extended record processing, and batch summary records.

Ask about price. And discover that Cummins key/disk terminals provide more processing power per dollar than any other key entry system.

Ask about scanning for high volume data entry. And about re-entering rejects with a single key stroke of each unrecognized character. Ask about printers and communications and learn about the 4400 KeyScan Multimedia Data Entry System.

Ask around. And while you're at it ask about Cummins, a company with over 45 branch sales and service offices located across the country. Send for the 4400 KeyScan System brochure. Write: 830 Waukegan Rd., Glenview, IL 60025. Or ask the operator to dial 312/724-8000 and make an appointment to visit our demonstration facilities.

Ask about the KeyScan Data Entry System. Then ask about other systems and you decide which is best.

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Glaser Pushes DPMA Entry

PARK RIDGE, Ill. – "As long as DPMA remains apart (from Afips), we represent a somewhat biased section of the information processing field," admitted George Glaser, president of the American Federation of Information Processing Societies (Afips) in an interview in *Data Management* magazine.

". . . both Afips and DPMA must view any type of relationship as serving their mutual interests if it is to be meaningful," he said. "On Afips' part, we believe DPMA will add a new dimension to our efforts and contribute substantially to many of our projects with the end result that we will be better able to serve both the user community and the computing profession as a whole."

Data Management is the official DPMA monthly, and the Glaser interview was interpreted by some as a move by DPMA officials to get "grass root support" of an Afips invitation for DPMA to join Afips as a full member. DPMA has been considering the proposal, but has not yet reached a decision.

While Afips feels that having DPMA as a member would benefit the federation, Glaser sees benefits for DPMA, too. "Efforts in such areas as systems improvement and professionalism will obviously impact DPMA and its membership," Glaser commented. He also cited the opportunity of having a voice in the National Computer Conference and within Ifip as benefiting to DPMA members.

"This 'togetherness' would in no way compromise DPMA's identity or its autonomy in its current future activities," Glaser emphasized. "DPMA membership in Afips would work toward the common good, strengthen both organizations, and assure our industry and our profession the strongest possible representation in responding to current issues and those which undoubtedly will face us in the future."

Societies/ User Groups

Calendar

Dec. 3-7, Paris – U.S. Micrographic and Document Handling Systems Exhibition. Contact: William S. Gaines, U.S. Department of Commerce, BIC-226, Washington, D.C. 20203.

Dec. 4-5, Washington, D.C. – 1973 TDCC National Transportation Forum and Exhibit. Contact: TDCC, 1101 17th St., N.W., 20036.

Dec. 10-12, Washington, D.C. – 2nd Joint Conference on Sensing of Environment Pollutants. Contact: 2nd Joint Conference Registration, c/o Instrument Society of America, P.O. Box 34093P, Pittsburgh, Pa. 15230.

Jan. 14-16, Washington, D.C. – Winter Simulation Conference 74. Contact: Michael F. Morris, Federal Simulation Center, 20330.

Jan. 15-19, San Francisco – American Mathematical Society 80th Annual Meeting. Contact: American Mathematical Society, P.O. Box 6248, Providence, R.I. 02904.

Juvenile Justice Topic of Conference

ATLANTA – Juvenile court judges, probation officers, police officers and DP managers will be gathering here, Dec. 6-8, for the National Symposium on Computer Applications in the Juvenile Justice System.

The conference will cover all aspects of juvenile justice from computer-assisted evaluation and prescription for juvenile delinquents to the planning, installation and implementation of on-site computer services in medium to small probation departments.

A discussion of confidentiality and security of computerized records and a comparative analysis of juvenile information systems will also be featured.

George Hall, Law Enforcement Assistance Administration, is the scheduled keynote speaker.

Registration fee for the conference at the Marriott Motor Hotel is $115. Details are available from the National Council of Juvenile Court Judges, P.O. Box 8000, Reno, Nev. 89507.

Acpa Passing Hat For Institute Loan

KENSINGTON, Md. – The Association of Computer Programmers and Analysts (Acpa) is passing the hat among its members to raise the money for a loan it must make to the Institute for Certification of Computer Professionals (ICCP).

ICCP bylaws require a loan from the member societies, proportionate to each society's membership. This, according to Geoffrey B. Thomas, Acpa chairman, "would amount to barely over $1 per Acpa member."

Acpa, however, is asking for a contribution of $4 per member, but "in order to make the whole thing worth writing a check for" is offering a sterling silver Acpa member pin to each member contributing $10 or more.

Societies Sundries

Uaide Membership OKs Merger

ST. LOUIS – At a recent Uaide annual meeting, the Users of Automatic Information Display Equipment membership voted overwhelmingly in favor of a merger with the National Microfilm Association.

Upon ratification by the NMA membership, the Computer Image Processing Division of NMA (CIP) will be established by installation of the present Uaide Board of Directors as the original board of directors for the CIP Division.

– – –

The Association of Computer Programmers and Analysts (Acpa) has established a "warm line" for questions, problems and input from members to the Administrative Headquarters. The number is (301) 949-8347.

– – –

The American Records Management Association (ARMA) has elected Gerald F. Brown as national president for the 1973-74 term.

– – –

The Data Processing Management Association (DPMA) and the U.S. Army Logistics Management Center (ALMC) have jointly established a new certification program in logistics management for qualified U.S. Department of Defense personnel.

Additional information is available from Commandant, U.S. Logistics Management Center, Attn: AMXMC-A-R, Fort Lee, Va. 23801.

– – –

The International Federation for Information Processing's General Assembly has voted to hold the 1977 Ifip Congress in Toronto, Canada. Ifip'74 is being held in Stockholm.

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Data Entry Problem Leaves Some Ex-GIs Out in the Cold

TOGUS, Maine – Conversion from mechanical to handwritten data entry forms has resulted in some difficulties for VA benefit recipients.

Some former GI students at the University of Maine-Farmington have complained that they did not receive their GI checks for as long as three months this fall. As a result, they said, they were going without food and clothes, couldn't pay their rents, and some even had dropped out of school.

There is nothing wrong with the computer, according to John J. Jackson, VA Center director. "We've gone from the old Flexowriter in our educational awards to optical scanning. It's only the input that got fouled up, it's not the computer," he said.

There were numerous reasons for the rejection of the forms, he said. In some cases it was a problem of getting people trained to write carefully enough for optical scanning, and in others the necessary forms had not been submitted so there was an absolute bar to payment in the computer.

"There weren't very many people affected at that school," he said. "Fifteen would probably be an overestimation."

Private Belgian Students Can Get DP Diplomas

BRUSSELS, Belgium – Private school students here for the past year have had the opportunity to graduate with a diploma recognized by the DP industry, according to *Asab Actualités*, a bimonthly publication of the Association of Informaticians of Belgium (Asab).

Under the auspices of Asab and Cetai, another DP association, a committee was formed in 1971 to consider the teaching of data processing through the private schools, and met several times throughout 1972. Their major conclusion was to establish an examination jury which will set up examinations to test analyzing and programming skills, to be given several times a year.

It's a Rough Job

CANBERRA, Australia – Yes, a DP director's lot is often not easy, demanding an assortment of talents.

But a recent ad in a trade publication here comes close to topping all others in supernatural demands. In addition to being capable of running a center, developing new operating techniques and "maintaining close and harmonious working relations with the contractor providing the computer and peripheral services," the applicant must "be capable of working to deadliness under pressure."

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Personal profile
Jim Patti of James P. Patti & Associates, Los Angeles, California. Thirteen years experience, heavily on the operations side. DPMA member. An avid golfer and jazz musician in his leisure hours.

"Sure, I'm enthusiastic about CFI Memories," says Jim Patti of James P. Patti & Associates. "Last year, I sold over a thousand packs. And in this product area, I carry CFI exclusively."

"They've increased their production capacity with a new plant that turns out both IBM-compatibles and non-standards. And they're responsive. If a customer needs ten disk packs or cartridges in the afternoon, he gets them. If he needs a straight answer to a technical problem, he gets that in minutes because CFI's technical people are always available for immediate consultation."

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Jim Patti, an enthusiastic pro with in-depth experience in this business, is typical of the 186 representatives serving CFI customers here and overseas. Together, they've supplied users and OEM's with thousands of disk packs and cartridges. And they're all men who work hard to earn your business by providing the kind of personal attention you require.

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Worms B-eat Path to Success

CAMBRIDGE, Mass. — In an exercise resulting in one small step for worms, a giant stride for paleontologists and a new piece of computer/plotter artwork, scientists at MIT have plotted the hypothetical "eating path" of worm no. 2,227 (one of 6,007 worms considered).

The goal of the study was to see why some worms live longer than others.

It seems that certain prehistoric worms fed on sediment in the mud at the bottom of ponds. For efficiency, they would not retrace paths which had already been traveled, since no food was left there.

Yet food probably occurred in patches, so it was beneficial for worms wishing to succeed that they stay near those patches. Worms had innate "rules" regarding how close to "eaten paths" to stay, how far to go before turning, etc.

These rules varied depending on species, and the MIT people claim paleontologists can trace the development of species and determine the similarity of species comparing fossil records of worm tracks.

The scientists' project first assumed a given worm was constrained to eat food only along grid lines of graph paper. By setting up different "rules" for turning and when to turn they were able to produce sample patterns with a Calcomp plotter.

Service to Disperse Cancer Data

BETHESDA, Md. — The U.S. Department of Health, Education and Welfare/ National Institute of Health has launched a worldwide service to speed cancer information to physicians and scientists.

Dr. Frank J. Rauscher Jr., director of the National Cancer Institute, said NCI has awarded a $780,000 contract to Informatics, Inc. of Canoga Park, Calif., to develop the first phase of the Cancer Information Service (CIS).

The contract calls for developing:

- An international cancer research data bank, which will collect, store and disseminate results of cancer research to scientists throughout the world.
- Cancer literature and data services such as indexing, abstracting and translating.
- Information support services, which will produce information such as directories, surveys, progress reports, catalogs and special reports.

Special projects to be undertaken in the first phase of the contract include a catalog of all information systems and services currently being offered by NCI, and a directory of organizations and individuals throughout the world offering cancer research and treatment.

DP Assigns Road Patrol To Accident-Prone Areas

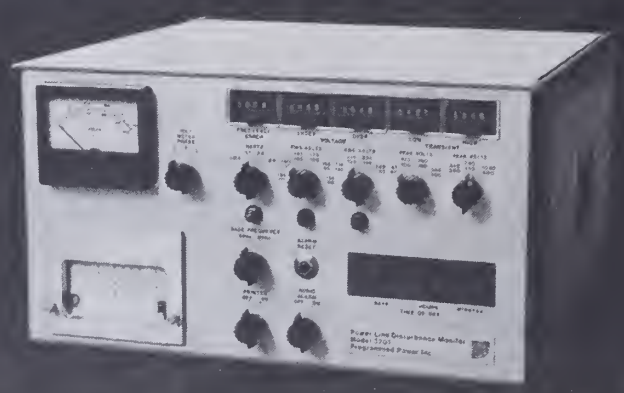
HELENA, Mont. — A computer here is handing out work assignments to an accident prevention team which patrols U.S. 93 in western Montana.

Accident patterns and frequencies are programmed into the computer and activity schedules are made in accordance.

Four different Montana Highway Patrolmen serve under Capt. Al Buck during 10-day intervals in a program which will eventually include all Montana patrolmen.

Buck said he feels the efforts of the accident prevention team have effectively reduced the fatality rate in Montana, along with increased local prevention efforts.

Power Line Disturbance Monitor



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CI Notes

Mini-Memory Pacts Set

NEWPORT BEACH, Calif. – Intelligent Memory Systems, Inc. (IMS) has been awarded a contract from International Computer Equipment, Inc. (ICE) to provide minidisk memory systems for ICE's System 2000 programmable intelligent terminal.

Primary elements of the equipment supplied to ICE will be the MU-100 and MU-200 Disk Memory Systems and relevant interfaces.

Singer POS More Interactive?

NEW YORK – New features including expanded user "interactivity" are expected to be introduced for Singer's point-of-sale equipment in January.

The interactivity coincides with Singer's development efforts in distributed intelligence, sources noted.

While Singer officials have declined comment on the new features, customers have been briefed on some of them.

Rockwell Wins Bubble Contract

ANAHEIM, Calif. – Rockwell International Corp.'s Electronics Research Division has been awarded a government contract to develop producibility techniques for bubble memory devices.

The Industrial Management Division of the U.S. Army's Electronics Command (Ecom), which awarded the contract, has established requirements for cylindrical magnetic domains for use as high-density, low-power, computer memory storage elements.

The 22-month program will conclude with a pilot run.

IBM Varies Displays

ARMONK, N.Y. – When IBM released its new point-of-sale (POS) and banking systems, it gave the proponents of gas plasma displays a boost by incorporating this technique into the systems' terminals – instead of using raster scanning or light-emitting diodes.

What was left unsaid was that IBM was using three different display techniques in the terminals with each technique supplied by a different source.

The supposition is that IBM is evaluating each approach and will eventually move to one technique and one supplier after results are in from the field.

The only known supplier is Burroughs.

Supershorts

The Computer Dealers Association has expanded its membership from 35 to 39 members.

– – –

Computer Machinery Corp. has terminated discussions with a major French financial institution for the proposed sale of its wholly owned subsidiary, CMC France, S.A.

– – –

Information Storage Systems (ISS) has shipped its 10,000th disk drive, to Univac, which bought ISS from Itel this year.

– – –

Decision Data Computer Corp. has made initial shipments of card equipment to TRW Electronics under the terms of a contract for orders exceeding $2.3 million.

– – –

Tesdata Systems Corp. has appointed Dier Computer Corp. Ltd., Sydney, Australia, to market its performance measurement systems in Australia and New Zealand.

– – –

Thorn Electrical Components Ltd., England, has signed a provisional agreement with Panelgraphic Corp. to establish a jointly owned company in Britain for the European production and marketing of information display products.

Energy Crisis Outlook

Semiconductor Suppliers Face Cutbacks

By E. Drake Lundell Jr.
Of the CW Staff

PALO ALTO, Calif. – Like the rest of the U.S. economy, the computer industry is sure to be affected by the energy crisis which may well throw the entire economy into a tailspin early next year.

But the real problem facing computer and peripherals companies may come from their suppliers, especially the suppliers of semiconductors which mostly are located here.

The semiconductor manufacturers – which most computer companies rely on for integrated circuits – face a two-pronged threat: a reduction in the amount of silicon available and the possibility of power cutbacks which could seriously cripple their growing operations.

Silicon, the basic building block for all integrated circuits, is made out of sand and a great deal of power goes into changing the sand into finished silicon which can be etched to make the integrated circuits.

Most circuit producers today are not particularly worried about this threat, however, and are more worried about the effect of power cutbacks planned for this area over the next few months.

Most of the current cutbacks are voluntary reductions of between 5% and 10% which can be met by reducing lighting and air conditioning and other non-essential services. But deeper cutbacks could force some manufacturers here to shut down operations at least temporarily.

The main problem is that the power companies are trying to get firms to reduce their power usages from the levels experienced in 1972, but in the intervening time, the semiconductor has become more widespread and all the plants here are expanding – with even more expansion plans on the boards for 1974.

Reducing power below the levels of 1972 would force most firms to slow or scrap present expansion plans and possibly cut back from some of the expanded production of this year.

In addition, it is not easy to shut down the huge furnaces used to make the integrated circuitry – they generally cannot be shut down for a couple of hours a day but would have to be shut down for extended periods, with some figures suggesting the industry work for a month and then take a week off in order to shut down the furnaces and refire them successfully.

Any slowdown on the supplier level, of course, will have serious effects on the rest of the industry, slowing it and perhaps creating some layoffs.

Kilpatrick Challenges Cary: Say Openly Calcomp Guilty of Theft

By Marvin Smalheiser
and Toni Wiseman
Of the CW Staff

ANAHEIM, Calif. – The president of Calcomp last week dared Frank T. Cary, president and chairman of IBM, to say in open forum that Calcomp is guilty of stealing.

Lester T. Kilpatrick offered the challenge at the company's annual shareholders meeting while speaking about IBM's counterclaims [CW, Nov. 28] to Calcomp's suit charging IBM with monopolizing the plug-compatible peripherals market.

Calcomp's charge of antitrust violation was answered by IBM "by a general denial and a series of counterclaims against Calcomp, an action which was not unexpected," Kilpatrick said.

The Calcomp executive said he was "tired of the character assassination which results from the actions of IBM in the guise of court actions where they're protected by libel laws."

A general denial of allegations in IBM's countersuit was made by Kilpatrick who said there was a "real prospect" of winning the suit.

Trade Secrets Involved

The first counterclaim made against Calcomp by IBM is the allegation that Calcomp has knowingly and willfully engaged in a variety of actions aimed at stealing trade secrets from IBM.

"This charge is false and I believe is known by IBM to be false," Kilpatrick

The second counterclaim made against Calcomp by IBM is that of patent infringement. In particular, 18 patents are cited as being infringed by Calcomp.

This allegation, Kilpatrick said, was a further effort by IBM to use its patent position to enhance its monopoly position.

"While it is true that in recent years a majority of patents have been found to be invalid after extensive litigation, the task of trying to invalidate the several thousand patents held by IBM would be monumental, even if successful," he said.

A charge that Calcomp has monopolized the digital plotter market, he said, was "extremely flattering" and "ridiculous."

The overriding fact that a number of people forget, Kilpatrick said, is that "IBM is guilty of monopoly. They can talk all they want but it won't overcome that fact."

Qantel Aims to Seek Out, Create Small Business System Market

By Molly Upton
Of the CW Staff

HAYWARD, Calif. – Qantel Corp.'s introduction of a low-cost small business system (Page 23) underscores the firm's intention to seek out and create a market for the small business stand-alone system and the intelligent communications unit.

Less than 10% of the businesses with 250 or fewer employees now have a computer, and there are 400,000 prospects in that category, noted President Douglas Baker. "We're creating a whole new industry," he said.

In addition to the size of the market, Baker cited its stability. He said he thought the small systems market would tend to be more impervious to a flattening in the economy.

Minicomputers are simple tools to use, he said. "It's ridiculous to think they're complex."

Qantel plans to add two or three branches to its three existing sales locations and add up to 50 distributors in two years. The firm also is contemplating signing an independent maintenance firm in addition to its service capability in 30 states, he said.

The new 1100 and 1200 systems, scheduled for January delivery, sell for $29,500 and include 6M bytes of disk storage, a CRT made by Qantel and a 60/100 line/min printer.

The firm also has brought out a high level business language.

Basically the systems are a reconfiguration of the current Qantel line, with different peripherals, he said. The current systems sell in the $45,000 to $100,000 range.

By 1980, Baker projected, the market for intelligent communications systems, i.e., those that number-crunch before transmission, will reach $1.5 billion from the current $500 million.

The industry is moving from accounting machines to disk systems, he noted, adding that he thinks paper tape and magnetic stripe will become obsolete. In two years, he said, all input will be performed with a CRT console.

Qantel's computers must be operator-oriented, expandable in terms of the number of users, disk size and printer speeds, and be capable of multi-programming and public programming, or access by more than one party to the same program, Baker said.

Douglas Baker

In addition, the unit should offer communications capability up to 9,600 bit/sec, he said.

The product has "got to be configured so the user isn't obsoleted. If the user can't upgrade, the product won't sell and we shouldn't offer it," he added.

Baker plans to continue the consumerization of the mini-computer which he instituted at Basic Four with the introduction of radio and billboard advertisements.

Qantel sells its units to the end user, and has never gone into the OEM segment of the market, but Baker said the firm is starting to explore the OEM portion for its CPU and new CRT.

Rise in DP Products To 'Test' Firm Survival

NEW YORK – The growing range of computer products will represent a "principal testing ground" for whether a company's information management team can "survive the new environment projected for the 1980s," according to at least one industry executive.

Paul A. Strassmann, director of the information services division of Xerox Corp., said the "range of choices" will continue to grow, and that a user's flexibility can be enhanced through use of specialized peripherals, add-on core and off-line printing.

How to Realize Gains

In remarks prepared for delivery at The Conference Board's meeting here last week, Strassmann also said users could realize gains by using dedicated time-sharing processors, interconnecting with specialized computer service suppliers, and purchase of "peaking" capacity on an RJE basis.

Users should also consider distributing special-purpose applications into minicomputers and designing telecommunications applications to carefully segregate communications, data base access and applications logic functions, he said.

Strassmann was unable to attend the meeting because of illness, and his remarks were given by James F. Sutter of Xerox.

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Soviets Planning National Data System

WASHINGTON, D.C. – While agreeing the USSR is about five years behind the U.S. in computer applications, a group of American scientists, after a 10-day visit there, feel the Soviet Union knows where it wants to go and is poised for some large strides forward.

International Roundup

The group was led by Dr. Lee G. Burchinal, head of the Office of Science Information Service of the National Science Foundation, who said the Soviets have established a strong base for rapid future growth.

Centralized Planning

Reflecting the Soviet style of centralized national planning, Burchinal said the Soviets are well advanced toward development of an integrated national information system embracing both science and technology.

There are four major components to this system, he indicated: centralized policy, planning and review; concentration of national resources at national institutions; 82 branch information networks established by the industrial ministries; and development by the 15 republic and 72 regional information institutes of "interbranch" or interdisciplinary dissemination services to serve local industries.

A major feature of this national information system, Burchinal said, is an emphasis on active dissemination of information about technological innovations throughout the economy.

The group also noted the emphasis given to the development of these information resources by the top planners in the USSR, Burchinal said.

This commitment is reflected by the resources devoted to developing improved information systems, including four new buildings in Moscow alone under construction for such services, expanding staffs and the planned installation of third-generation equipment at "numerous" sites during 1974.

Canadian Joint Venture to Provide Accounting Service for Small Firms

Special to Computerworld

TORONTO, Ont. – One of Canada's largest banks, the Bank of Nova Scotia, has entered into a joint venture with Datacrown Ltd., a computer service organization, to provide a computerized accounting service for small businesses throughout Canada.

A new company, Telaccount Ltd., is marketing the service. Telaccount has acquired exclusive Canadian rights to the service from General Computer Service, Inc., El Paso, Texas.

Phone or Terminal

Using Touch-Tone telephones or computer terminals, customers send their daily accounting data to Telaccount, which records the data on magnetic tape for daily transmission to an IBM 370/168 at Datacrown's computer center here.

After processing, the data is transmitted back to Telaccount where customer reports are printed. Reports are available at the start of the next business day at the customer's nearest branch of the Bank of Nova Scotia, which has 825 Canadian branches.

In areas where there is no Touch-Tone phone service, low-cost telephone company coupling devices are available, permitting Touch-Tone input, a spokesman said.

Interdata Forms Aussie Subsidiary

SYDNEY Australia – Interdata, Inc. has formed an Australian subsidiary, Interdata Computers Pty. Ltd. The new firm will initially have a sales/service responsibility, but may move into the manufacturing area in the future, a spokesman said.

The firm currently has a backlog of $250,000.

Interdata also has subsidiaries in Canada, the UK and West Germany.

More than 70 exhibitors and 35,000 computer users are expected at The U.S. Computer Caravan/74.

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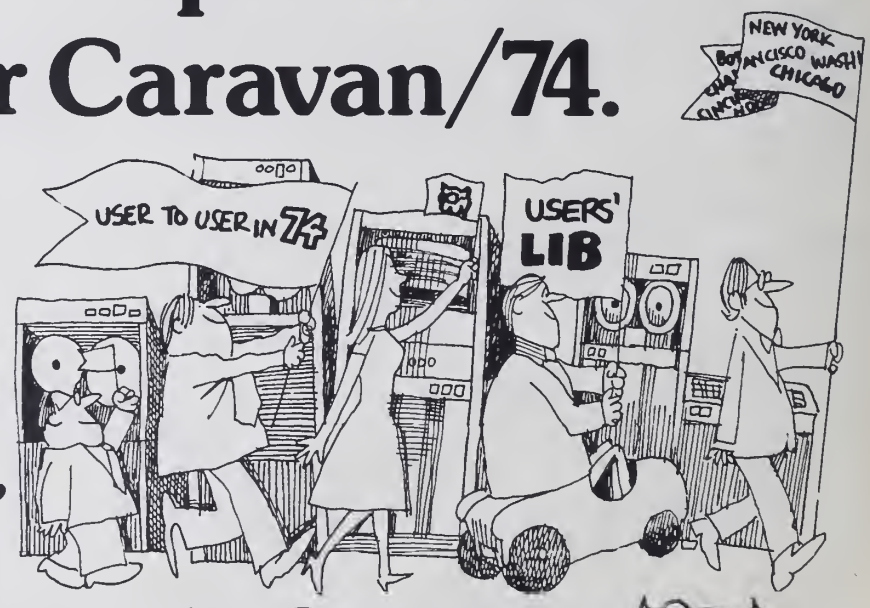

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Trend Toward Unbundling

Mini Market in Japan Proves a Blur of Activity

By Shukan Computer
Special to Computerworld

TOKYO – The minicomputer market here is brisk. Smaller businesses are actively introducing them and major users are considering ordering them in large quantities as intelligent terminals based on their on-line plans.

And there is a trend toward unbundling – or separate pricing of hardware, software, SE and education fees.

The top domestic manufacturer in the field of miniature models, Mitsubishi Denki, is developing the new Melcom Series with plans to announce it formally early next year; it is believed to include a strengthened on-line function of a level higher than the "accounting register base."

Nippon Denki in late August announced the Neac System 100 which raises data communication efficiency via public circuits by using nine types of basic systems.

The development of Neac System 100's hardware reportedly was completed last fall, and the careful preparations of software such as the simple business processing language Best and application system Aplika are underway. Plans call for setting up user support centers in the major cities.

Also, Kanematsu-Nixdorf Computers in September announced the Nixdorf 820/155 which uses virtual firmware, and while magnifying the range of the 820 Series, it is hammering out a full-scale policy of unbundling.

Japan NCR unrolled a nationwide campaign this fall with plans to expand and strengthen its sales system in the provincial cities.

Also, Uchida Yoko, to commemorate surpassing the 1,000 mark on its Usac 720 Series, has held two exhibits.

Also, decentralized processing is a major element in Japan giving impetus to the growth of the minicomputer market.

Kao Soap has decided to install 100 units of Melcom 86 as well as 88 to carry out a plan linking on-line its main office with its nationwide sales offices. Due to the liberalization of circuits, the on-line plans of each major company are being unraveled steadily, and signs indicate a rapid growth of this market area, too.

It is expected there will be a reversal in the use of L series – sold by Takachiho-Burroughs and said to have 6,000 orders received – as on-line terminals from this year through next.

A trend toward unbundling is also noteworthy in minicomputers. Previously, Kanematsu-Nixdorf Computers made unbundling a user option but, starting with the recently announced 820/155, plans to make it a policy.

Other companies are also implementing unbundling uniformly, but are saying that "recently there has been a change in the users' way of thinking, and business activity is evolving more smoothly than in the past."

Software is showing a strong tendency toward being recognized as having independent value, and it appears it will also influence price separation of the all-purpose family series.

Patents Indexed

LONDON – Derwent Publications Ltd., seeing the need for a catalog of the patent specifications constantly being filed around the world, is establishing a computerized index starting in January 1974.

Derwent believes patent specifications filed in Japan and many European countries are published so rapidly, they are replacing conventional trade and scientific journals as sources of information on new ideas and latest developments.

Each week computer-generated and phototypeset World Patents Index (WPI) will give fully indexed information on over 12,000 patents on all subjects published four to five weeks earlier in 24 major countries.

In a single gazette WPI will contain different indexes which will allow scanning in a matter of minutes by patentee, subject matter and key words, and will identify families of patents.

Microprocessors Come of Age

By Molly Upton
Of the CW Staff

SAN FRANCISCO – Microprocessors are coming of age, as evidenced by their increased utilization in CPUs, calculators, peripherals and test equipment.

An increasing number of products offer users and designers a means of programming the programmable read-only memory (Prom) chips.

Data I/O from Bellevue, Wash., recently displayed four units, including its Programmer IV, which will gang-program up to 16 MOS Proms from either a master ROM or paper tape unit. The Programmer I includes an eight-key keyboard, tape perforator and reader, and programs one chip at a time. The device will program from a master ROM, paper tape, card reader or buffer memory, the firm said. Data I/O's mailing address is P.O. Box 1603, Bellevue, 98009.

'Personality Module'

Spectrum Dynamics is marketing a manual, portable Model 310 Manual Memory Programmer, which handles both bipolar and MOS Proms. To program a Prom by a different manufacturer, the user inserts a different "personality module." Proms up to 1,000 words by eight bits are handled by the basic unit, which sells for $900 including one module.

Data I/O Programmer IV

The firm also introduced at Wescon its production-oriented Model 520 automatic memory duplicator [CW, Sept. 19]. By means of a foot pedal, the operator can quickly activate the automatic sequencing switch. The unit can also cycle through each step manually as well, and includes as options a 4K-bit random access memory to store the ROM pattern, paper tape reader and interface for optical card reader. The unit costs $1,500. Modules cost from $500 to $600, depending on type from 1302 W. McNab Road, 33309.

CW Photos by M.Upton

Spectrum Dynamics Prom

ICL Eyes Australia

SYDNEY, Australia – ICL hopes to double its share of the Australian DP market by 1980, reaching 20%, according to C.W. Wilson, director of ICL's International Division.

The Australian DP market is worth between $120 million and $150 million a year, and growing at a rate of 20%, he estimated. The market includes sales of computers, peripherals and services.

Australia, he noted, is one of the most competitive markets in the world for DP, partly because of the number of companies that have entered Australia in recent years.

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March 19-21	Nantes	Foire de Exposition
March 26-28	Lille	Palais de Expositions
April 2-4	Nancy	Palais de Expositions

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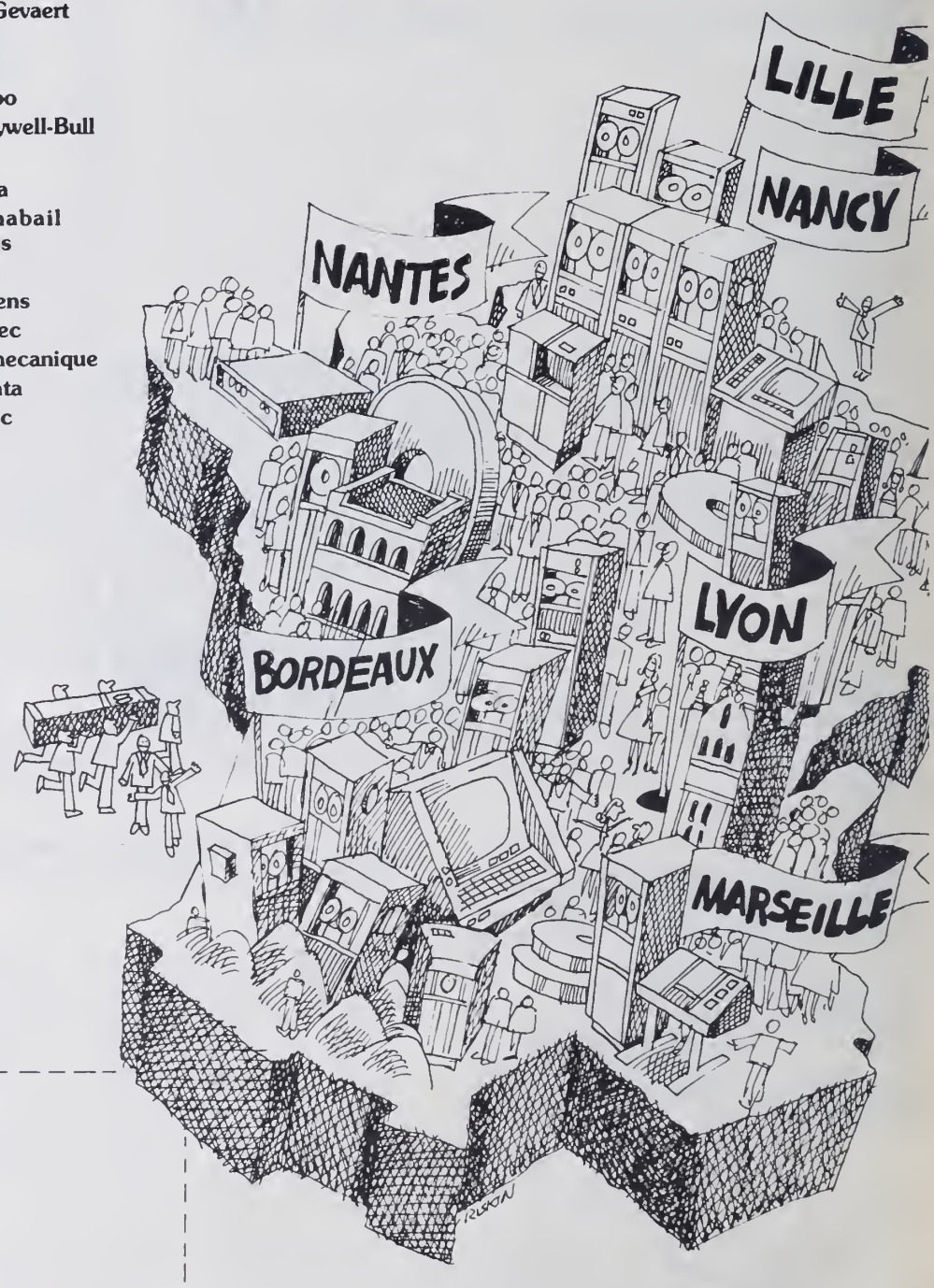

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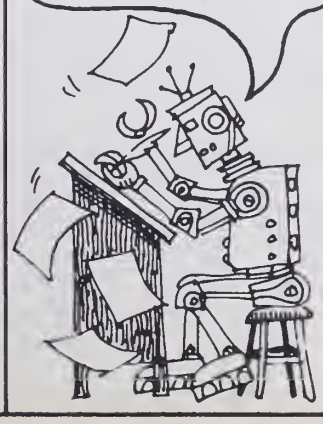

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Fabritek Earnings Bright, Not So at CIG

Fabritek, Inc. and Computer Investors Group, Inc. (CIG) showed varying earnings results. The two firms recently announced a $10 million transaction including the purchase of Fabritek's installed base of IBM-compatible memories by CIG, and Fabritek agreed to acquire Data Recall Corp., in which CIG owned an equity position.

Six-month earnings of CIG, a computer lessor, were hurt by increased depreciation on its System 360 equipment and fell to $229,784 or 11 cents a share from $666,302 or 30 cents a year ago.

Revenues rose to $10.2 million from nearly $8 million in the year-ago period.

The earnings figures reflect additional depreciation charges of $356,500 or 16 cents a share in 1973 and $419,600 or 19 cents a share in 1972.

Memory maker Fabritek's earnings, boosted by tax credits, soared to $1.1 million or 32 cents a share in the six months ended Sept. 28, compared with $116,007 or 4 cents a share in the 1972 period.

There was a $535,382 or 16 cents a share tax credit in 1973, compared with a credit of $56,969 or 2 cents a share in the year-ago period.

Revenues rose 66% to $16.3 million from $9.8 million.

In the quarter, Fabritek revenues reached $8.8 million compared with $5.4 million, while earnings rose to $601,779 or 18 cents a share, including a $309,959 or 9 cents a share tax credit.

In the 1972 quarter, earnings reached $135,548 or 4 cents a share aided by a $44,216 or 1 cent a share credit.

Computer Automation Revenues Up 81% in 1st Quarter, Earnings Climb

IRVINE, Calif. – Computer Automation, Inc.'s revenues rose 81% in the first quarter ended Sept. 30, and earnings continued to rise, despite the expiration of tax credits.

Revenues rose to $3.9 million from $2.2 million in the year-ago period.

Income before tax credits doubled, to $396,780 or 24 cents a share from $175,171 in 1972 when a $165,000 tax credit boosted the earnings figure to $340,171 or 23 cents a share.

The Naked Mini company has installed more than 3,000 machines.

President D.H. Methvin attributed the firm's continuing performance rate to a "burgeoning demand" for the firm's low price minicomputers.

The firm has arranged an unsecured $5 million line of credit for two years with Security Pacific Bank of California and Morgan Guaranty Bank of N.Y.

Proceeds will be used to supplement working capital required to support corporate growth, Methvin said.

Toward the Bottom Line

Hazeltine has arranged a $6 million mortgage loan with the Franklin National Bank, to be repaid over 10 years. The line will be used to finance continued growth of its peripheral product sales, especially the 2000 and 1000 display terminals.

$$$

Varian Associates, Inc. has declared an initial five-cent dividend to be paid Oct. 23 to shareholders of record Sept. 28.

$$$

Datatab has signed a licensing agreement to produce and market an on-line accounts receivable system operating on a minicomputer. It expects to expense costs as incurred, and to fund the program without outside financing. "We estimate break even on this project to occur in eighteen months at a net cost of approximately $150,000," Chairman Gerald Yass said.

$$$

Auto-trol said it has completed a major recapitalization from private investments. Sales for the first half of 1973 rose $500,000 above those of the same period last year. Backlog has increased 200%, which will require expansion of plant and personnel.

$$$

Datalight has curtailed its efforts with **Datagraphix** on the development of a computer output microfilm printer and is looking for another distributor to market its existing equipment.

$$$

A decline in sales of computer-generated letters for political campaigns was cited by **Datatab** as a factor in the drop of first quarter earnings to $12,788 from $52,212 a year ago, when earnings included contracts for the presidential primaries.

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Delivery Schedules

370/145 Model 12	4/12/74
370/158 Model J	
#1 Delivery	1/18/74
#2 Delivery	2/15/74
#3 Delivery	3/22/74
#4 Delivery	4/19/74
370/158 Model K	
Delivery	12/28/73
370/168 Model K	
#1 Delivery	4/19/74
#2 Delivery	5/17/74
#3 Delivery	5/17/74

Earnings Reports

TYMSHARE
Nine Months Ended Sept. 30

	1973	a1972
Shr Ernd	$.47	$.23
Revenue	17,476,943	11,675,722
Tax Cred	258,000	277,000
Earnings	1,416,894	683,461

a-Restated to reflect acquistion in January 1973 on a pooling-of-interests basis.

DIGITAL EQUIPMENT
Three Months Ended Sept. 29

	1973	1972
Shr Ernd	$.58	$.33
Revenue	81,506,000	51,741,000
Earnings	6,538,000	3,427,000

TEXAS INSTRUMENTS
Three Months Ended Sept. 30

	1973	1972
Shr Ernd	$.85	a$.53
Revenue	312,401,000	227,442,000
Earnings	19,296,000	11,725,000
9 Mo Shr	2.58	a1.55
Revenue	917,791,000	679,559,000
Earnings	58,551,000	34,346,000

a-Adjusted for a two-for-one stock split in May 1973.

POTTER INSTRUMENT
Year Ended June 30

	1973	1972
Revenue	$47,356,571	$34,928,067
Loss	2,292,940	13,132,544

SYSTEMS ENGINEERING LABORATORIES
Three Months Ended Sept. 28

	1973	1972
Shr Ernd	.....	$.14
Revenue	$3,100,000	3,448,000
Spec Cred	.....	a322,000
Earnings	(778,000)	362,000

a-Gain on sale of land and building plus tax credit.

COMPUTER EQUIPMENT
Three Months Ended Sept. 30

	1973	1972
Shr Ernd	$.02	$.02
Revenue	7,152,000	4,543,000
Spec Cred	.....	32,000
Earnings	56,000	60,000
9 Mo Shr	.19	.18
Revenue	20,696,000	15,185,000
aSpec Cred	100,000	149,000
Earnings	460,000	445,000

a-Includes tax credit and gain on retirement of debt, less provision for loss on investments.

GREYHOUND COMPUTER
Three Months Ended Sept. 30

	a1973	1972
Shr Ernd	$.16	$.24
Revenue	12,063,000	b11,694,000
Earnings	698,000	1,026,000
9 Mo Shr	.45	.74
Revenue	33,408,000	b35,591,000
Earnings	1,946,000	3,205,000

a-Includes results of Bresnahan Computer Corp., acquired June 1, 1973. b-Restated.

CAMBRIDGE MEMORIES
Year Ended Aug. 31

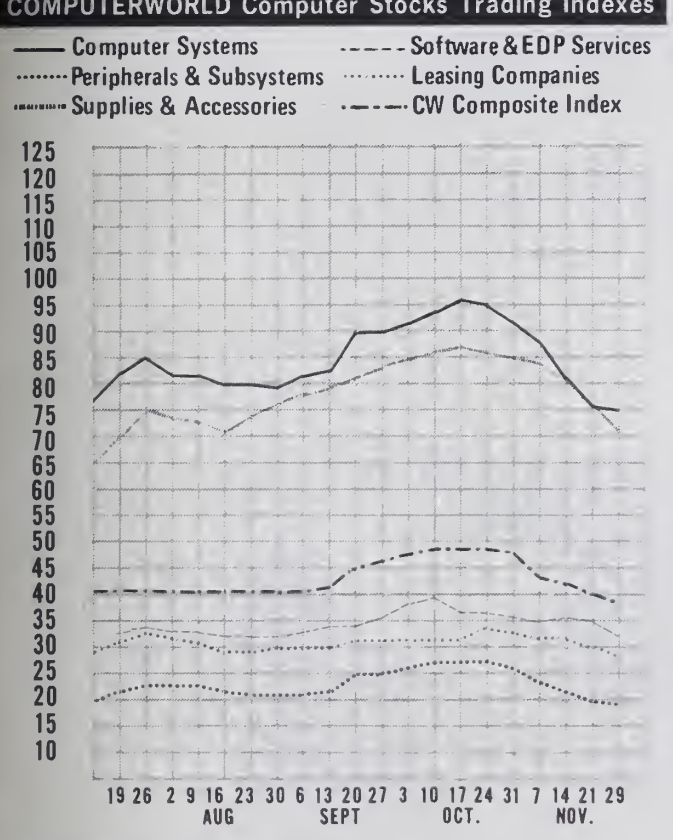
	1973	1972
Shr Ernd	$.49	$.23
Revenue	12,668,450	4,052,529
Tax Cred	62,880	112,000
Earnings	625,903	232,340
3 Mo Shr	.16	.10
Revenue	4,396,540	1,416,034
Tax Cred	.....	47,300
Earnings	200,221	102,794

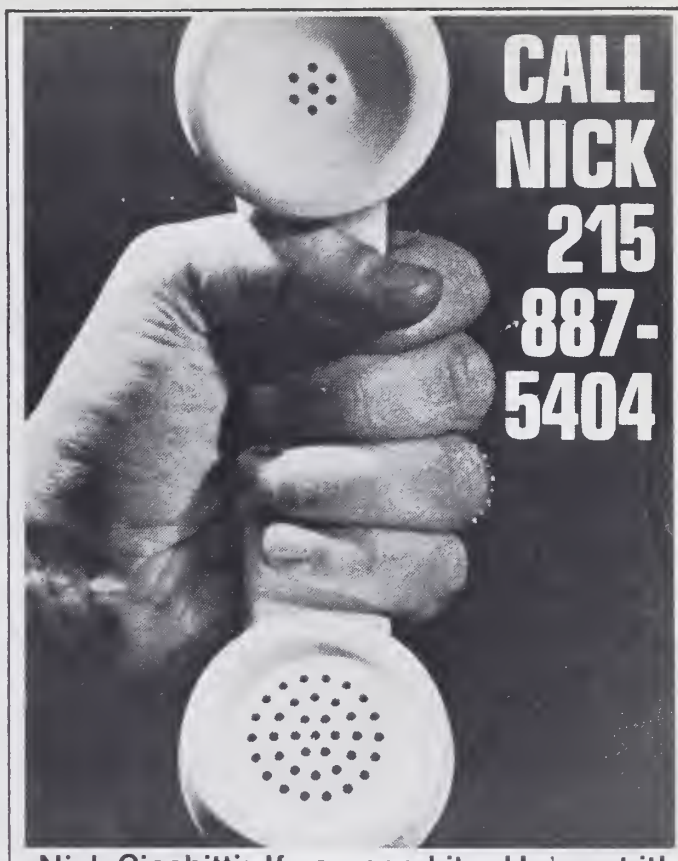
COMPUTER MACHINERY
Three Months Ended Sept. 30

	1973	a1972
Shr Ernd	$.16	.....
Revenue	13,568,000	$8,845,000
Tax Cred	426,000	.....
Earnings	849,000	(212,000)
9 Mo Shr	.36	.....
Revenue	35,936,000	19,912,000
bSpec Cred	993,000	107,000
Earnings	1,793,000	(2,329,000)

a-Restated. b-In 1973, tax-loss carryforward; in 1972, from sale of securities.

COMPUTERWORLD Computer Stocks Trading Indexes





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Quantity	Model	Availability
4	2311 1	Immed.
1	2841 1	Immed.
1	2415 1	Immed.

FOR SALE

1	2804-1	Immed.
1	2402 1	Immed.
1	2030 F	Immed.
1	2821 5	Immed.

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TRADE*QUOTES

Computerworld Stock Trading Summary

All statistics compiled, computed and formatted by TRADE★QUOTES, INC. Cambridge, Mass. 02139

EXCH		1973 RANGE (1)	CLOSE NOV 29 1973	WEEK NET CHNGE	WEEK PCT CHNGE
	COMPUTER SYSTEMS				
N	BURROUGHS CORP	211-252	225	-13 3/4	-5.7
N	COLLINS RADIO	16- 26	24 3/4	0	0.0
O	COMPUTER AUTOMATION	S- 20	11 1/4	- 1/4	-2.1
N	CONTROL DATA CORP	31- 62	36	-1 3/4	-4.6
O	DATA GENERAL CORP	28- 49	33 1/4	-2 3/4	-7.6
O	DATAPOINT CORP	10- 21	13 1/4	- 1/4	-1.8
O	DIGITAL COMP CONTROL	2- 6	2 5/8	+ 3/8	+16.6
N	DIGITAL EQUIPMENT	73-117	87 1/4	-7 3/4	-8.1
N	ELECTRONIC ASSOC.	3- 9	3 1/4	- 5/8	-16.1
A	ELECTRONIC ENGINEER.	6- 14	8 5/8	- 1/8	-1.4
N	FOXBORO	23- 48	38 1/2	+2 1/2	+6.9
O	GENERAL AUTOMATION	22- 55	29	-1 1/2	-4.9
O	GRI COMPUTER CORP	1- 3	1 1/8	0	0.0
N	HEWLETT-PACKARD CO	73- 99	82 5/8	-7 3/8	-8.1
N	HONEYWELL INC	79-139	81 1/2	-6 3/4	-7.6
N	IBM	249-340	266	-10 3/4	-3.8
O	INTERDATA INC	7- 14	9 3/4	0	0.0
O	MICRODATA CORP	2- 10	2 3/4	0	0.0
N	NCR	27- 46	34 1/4	- 1/2	-1.4
N	RAYTHEON CO	22- 35	29 5/8	- 5/8	-2.0
N	SINGER CO	42- 74	41 3/4	-3	-6.7
N	SPERRY RAND	36- 56	46 7/8	- 3/8	-0.7
A	SYSTEMS ENG. LABS	2- 8	1 7/8	- 1/8	-6.2
N	TEXAS INSTRUMENTS	83-138	117 3/4	+2 1/2	+2.1
O	ULTIMACC SYSTEMS INC	1- 11	1 3/4	+ 1/4	+16.6
N	VARIAN ASSOCIATES	10- 20	11 1/8	- 3/8	-3.2
N	WANG LABS.	13- 34	20	-1 3/4	-8.0
N	XEROX CORP	128-169	129 1/2	-8	-5.8
	LEASING COMPANIES				
A	BOOTHE COMPUTER	0- 0	1 1/8	0	0.0
O	BRESNAHAN COMP.	1- 2	2	- 1/8	-5.8
O	COMDISCO INC	5- 17	4 1/2	- 1/2	-10.0
O	COMMERCE GROUP CORP	3- 4	2 7/8	- 3/8	-11.5
O	COMPUTER EXCHANGE	1- 1	3/8	- 1/8	-25.0
A	COMPUTER INVSTRS GRP	2- 8	3 1/4	0	0.0
O	COMP. INSTALLATIONS	1- 2	1	0	0.0
M	DATRONIC RENTAL	2- 3	1 3/4	- 1/8	-6.6
A	DCL INC	0- 3	3/8	- 1/4	-36.3
A	DEARBORN-STORM	12- 26	15 5/8	+1 1/2	+10.6
N	DPF INC	3- 9	3 1/8	0	0.0
O	EDP RESOURCES	1- 3	1 3/4	0	0.0
A	GRANITE MGT	2- 6	3	0	0.0
A	GREYHOUND COMPUTER	3- 6	3 7/8	- 1/8	-3.1
A	ITEL	4- 12	4 3/8	- 3/4	-14.6
N	LEASCO CORP	8- 18	11	0	0.0
O	LEASPAC CORP	1- 8	1	0	0.0
O	LECTRO MGT INC	1- 2	3/8	- 1/8	-25.0
O	NRG INC	4- 15	3 1/2	- 5/8	-15.1
A	PIONEER TEX CORP	5- 8	7 1/2	0	0.0
A	ROCKWOOD COMPUTER	1- 3	1	0	0.0
N	U.S. LEASING	16- 36	18 1/4	0	0.0

EXCH: N=NEW YORK; A=AMERICAN; P=PHIL-BALT-WASH
L=NATIONAL; M=MIDWEST; O=OVER-THE-COUNTER
O-T-C PRICES ARE BID PRICES AS OF 3 P.M. OR LAST BID
(1) TO NEAREST DOLLAR

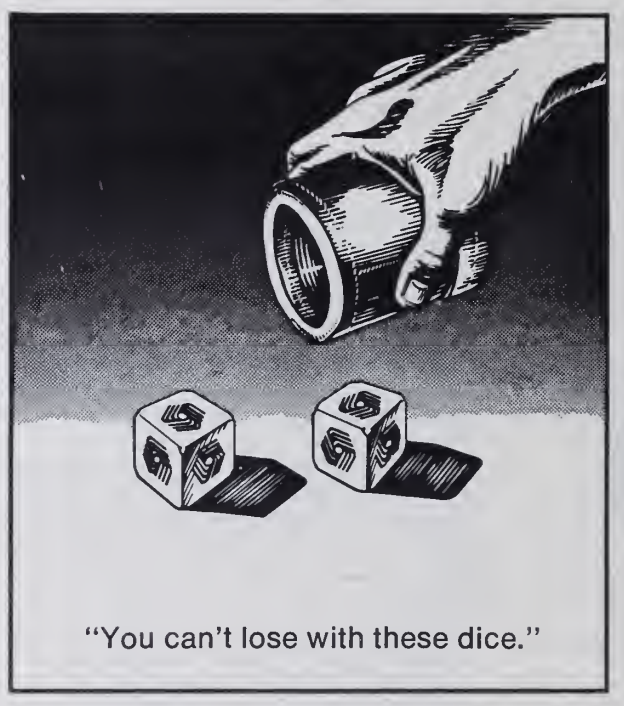
EXCH		1973 RANGE (1)	CLOSE NOV 29 1973	WEEK NET CHNGE	WEEK PCT CHNGE
	SOFTWARE & EDP SERVICES				
O	ADVANCED COMP TECH	1- 2	1 7/8	0	0.0
A	APPLIED DATA RES.	2- 4	2	- 1/8	-5.8
O	APPLIED LOGIC	1- 3	1/2	0	0.0
N	AUTOMATIC DATA PROC	39- 94	53 1/4	- 3/4	-1.3
O	BRANDON APPLIED SYST	1- 1	1/2	0	0.0
O	CENTRAL DATA SYSTEMS	3- 9	3 1/2	- 1/2	-12.5
O	COMPUTER DIMENSIONS	2- 5	2 1/4	- 1/2	-18.1
O	COMPUTER DYNAMICS	1- 2	1/2	0	0.0
O	COMPUTER HORIZONS	1- 6	2 1/4	- 1/4	-10.0
O	COMPUTER NETWORK	1- 5	1	- 1/4	-20.0
N	COMPUTER SCIENCES	2- 6	2 5/8	+ 1/8	+5.0
O	COMPUTER TASK GROUP	1- 2	1 1/8	- 3/8	-25.0
O	COMPUTER TECHNOLOGY	1- 3	1/2	- 1/2	-50.0
O	COMPUTER USAGE	4- 9	3 5/8	- 1/4	-6.4
O	COMRESS	1- 2	1/4	0	0.0
O	COMSHARE	3- 9	2 7/8	- 1/8	-4.1
N	COROURA CORP	3- 15	3 7/8	+ 1/8	+3.3
O	DATATAB	1- 4	1	0	0.0
A	ELECT COMP PROG	1- 2	7/8	+ 1/8	+16.6
N	ELECTRONIC DATA SYS.	29- 56	29 1/4	-2 1/2	-7.8
O	INFONATIONAL INC	1- 2	5/8	+ 1/8	+25.0
O	INFORMATICS	2- 6	5 1/8	- 1/4	-4.6
O	I.O.A. DATA CORP	1- 1	3/8	- 1/4	-40.0
O	IPS COMPUTER MARKET.	1- 5	1	0	0.0
O	KEANE ASSOCIATES	3- 5	3 1/2	0	0.0
O	KEYDATA CORP	6- 12	6 1/8	+ 1/4	+4.2
O	LOGICON	3- 7	2 3/4	- 1/8	-4.3
A	MANAGEMENT DATA	1- 5	1 1/2	0	0.0
O	NATIONAL CSS INC	18- 42	25	-2 1/2	-9.0
O	NATIONAL COMPUTER CO	1- 1	1/4	0	0.0
O	NATIONAL INFO SRVCS	1- 2	1/2	0	0.0
P	ON LINE SYSTEMS INC	12- 25	20 3/4	- 3/4	-3.4
N	PLANNING RESEARCH	2- 7	2 5/8	0	0.0
O	PROGRAMMING METHODS	21- 25	17	-4	-19.0
O	PROGRAMMING & SYS	1- 1	1/2	- 1/8	-20.0
O	RAPIDATA INC	3- 24	4 1/8	- 1/8	-2.9
O	SCIENTIFIC COMPUTERS	1- 3	5/8	0	0.0
O	SIMPLICITY COMPUTER	1- 4	2	0	0.0
O	TRS COMPUTER CENTERS	2- 7	5 1/4	- 1/4	-4.5
O	TCC INC	1- 1	1/8	- 1/4	-66.6
O	TYMSHARE INC	6- 13	8 1/2	- 3/4	-8.1
O	UNITED DATA CENTER	3- 6	3	0	0.0
A	URS SYSTEMS	3- 8	3 1/8	+ 1/8	+4.1
N	WYLY CORP	3- 11	3 5/8	- 3/8	-9.3
	PERIPHERALS & SUBSYSTEMS				
N	ADDRESSOGRAPH-MULT	11- 34	11 3/4	- 3/4	-6.0
O	ADVANCED MEMORY SYS	5- 23	5 1/4	0	0.0
N	AMPEX CORP	4- 7	3 3/4	- 1/4	-6.2
O	ANDERSON JACOBSON	3- 6	2 1/2	- 1/4	-9.0
O	BEEHIVE MEDICAL ELEC	5- 10	4 3/4	- 3/4	-13.6
A	BOLT,BERANEK & NEW	6- 12	7 5/8	+ 7/8	+12.9
N	BUNKER-RAMO	6- 18	7 3/4	- 3/4	-8.8
A	CALCOMP	5- 16	9	+ 1/8	+1.4
O	CAMBRIDGE MEMORIES	8- 17	14 1/4	+ 1/4	+1.7
O	CENTRONICS DATA COMP	13- 38	19	-1 3/4	-8.4
O	CODEX CORP	9- 19	10	- 1/2	-4.7
O	COGNITRONICS	1- 3	5/8	0	0.0

EXCH		1973 RANGE (1)	CLOSE NOV 29 1973	WEEK NET CHNGE	WEEK PCT CHNGE
O	COMPUTER COMMUN.	1- 4	3/8	- 1/2	-57.1
A	COMPUTER EQUIPMENT	2- 3	1 7/8	+ 1/8	+7.1
O	COMPUTER MACHINERY	4- 13	4 1/8	- 5/8	-13.1
O	COMPUTER TRANSCEIVER	1- 6	3/4	0	0.0
N	CONRAC CORP	14- 32	14 3/4	- 1/4	-1.6
O	DATA ACCESS SYSTEMS	1- 3	1	0	0.0
O	DATA 100	9- 19	10 3/8	-1 7/8	-15.3
A	DATA PRODUCTS CORP	2- 5	3 3/8	0	0.0
O	DATA RECOGNITION	2- 3	1 1/2	0	0.0
O	DATA TECHNOLOGY	1- 5	1 5/8	- 1/8	-7.1
O	DECISION DATA COMPUT	6- 40	7 1/2	0	0.0
O	DELTA DATA SYSTEMS	1- 1	1/2	0	0.0
O	DI/AN CONTROLS	1- 4	1 1/2	- 1/4	-14.2
N	ELECTRONIC M & M	3- 6	3 3/8	- 3/8	-10.0
O	FABRI-TEK	2- 5	2 1/2	0	0.0
O	GENERAL COMPUTER SYS	4- 9	4 3/4	- 1/2	-9.5
N	GENERAL ELECTRIC	56- 76	63 3/4	+1 1/4	+2.0
N	HAZELTINE CORP	5- 9	4 5/8	- 5/8	-11.9
O	INFOREX INC	4- 23	3 3/4	- 1/2	-11.7
O	INFORMATION DISPLAYS	1- 2	3/8	0	0.0
O	INFORMATION INTL INC	8- 15	9	- 3/4	-7.6
A	LUNDY ELECTRONICS	3- 9	2 7/8	+ 1/8	+4.5
O	MANAGEMENT ASSIST	1- 1	1/4	0	0.0
N	MEMOREX	2- 19	2 3/4	- 3/8	-12.0
A	MILGO ELECTRONICS	14- 28	16 1/2	-1 5/8	-8.9
N	MOHAWK DATA SCI	3- 13	3 1/4	- 1/2	-13.3
O	ODEC COMPUTER SYST.	2- 6	2 1/4	- 1/4	-10.0
O	OPTICAL SCANNING	2- 8	2 3/4	- 3/4	-21.4
O	PERTEC CORP	4- 8	4 3/4	- 1/2	-9.5
O	PHOTON	3- 7	3 3/4	0	0.0
A	POTTER INSTRUMENT	3- 9	3 5/8	- 1/4	-6.4
O	PRECISION INST.	2- 6	2 1/4	- 1/2	-18.1
O	QUANTOR CORP	5- 10	5	+ 1/2	+11.1
O	RECOGNITION EQUIP	2- 8	2 7/8	0	0.0
N	SANDERS ASSOCIATES	7- 18	7 7/8	- 1/8	-1.5
O	SCAN DATA	1- 6	1 5/8	- 3/8	-18.7
O	STORAGE TECHNOLOGY	11- 34	15 1/2	+1	+6.8
O	SYCOR INC	9- 20	10 1/2	- 1/2	-4.5
O	TALLY CORP.	2- 14	2 1/8	- 1/4	-10.5
O	TEC INC	6- 9	5 1/2	- 3/4	-12.0
N	TEKTRONIX INC	30- 55	43	+2 1/4	+5.5
N	TELEX	3- 8	3 1/2	0	0.0
O	WANGCO INC	7- 13	8 3/8	- 5/8	-6.9
O	WILTEK INC	7- 18	8	- 1/4	-3.0
	SUPPLIES & ACCESSORIES				
O	BALTIMORE BUS FORMS	5- 9	6 1/2	- 3/4	-10.3
A	BARRY WRIGHT	5- 13	5 1/8	-1	-16.3
O	CYBERMATICS INC	1- 3	1 1/4	- 1/8	-9.0
A	DATA DOCUMENTS	17- 26	20	-2	-9.0
O	DUPLEX PRODUCTS INC	7- 10	7 1/4	0	0.0
N	ENNIS BUS. FORMS	5- 8	5 1/8	- 1/8	-2.3
O	GRAHAM MAGNETICS	8- 20	8 1/2	-1	-10.5
O	GRAPHIC CONTROLS	7- 12	7 3/8	- 1/4	-3.2
N	3M COMPANY	78- 91	79 7/8	-2 5/8	-3.1
O	MOORE CORP LTD	53- 65	59 1/4	+1	+1.7
N	NASHUA CORP	42- 58	42	-1 1/2	-3.4
O	REYNOLDS & REYNOLD	28- 51	33 1/4	-4 1/4	-11.3
O	STANDARD REGISTER	13- 20	13	-1 1/2	-10.3
O	TAB PRODUCTS CO	8- 23	9	0	0.0
N	UARCO	15- 23	16 1/4	-1 3/4	-9.7
A	WABASH MAGNETICS	5- 8	5 1/4	- 3/4	-12.5
N	WALLACE BUS FORMS	15- 26	17 3/4	- 7/8	-4.6

Who took <u>all</u> the gamble out of buying & selling used computers?

We did it at Comdisco.

We're the one who'll sell you a pre-owned IBM computer at 40% less and guarantee to buy it back later. The one who's never had to back out of a single commitment or delivery date because of the multi-million dollar inventory we maintain. The one that data processing managers trust and investors look to as the industry spokesman. Why? We're a dealer, *not* a leasing company. Over 90% of our business is buying, selling, trading. We've grown about 225% a year since we started. Our net earnings went from $14,000 to over $1 million yearly in 4 years. And yes, we're the one that's publicly held and listed over the counter.



"You can't lose with these dice."

It's time to separate the dealers from the leasers.

We're also the one who thinks it's high time to separate the dealers from the leasers of pre-owned computers. The one who's launched a campaign to clarify what can be a confusing business for security analysts, investors, and sometimes DP personnel as well. We're the one, above all, who should *never* be confused with a leasing company. (Less than 10% of our revenue is from leased equipment.) We're the biggest dealer of pre-owned IBM computer equipment in the world. Our nearest competitor is less than half our size. And our share-of-market is now about one-third. You might say we're a pretty good investment any way you look at it. Specially if you look at our tell-all annual report. We've a copy for you. Write us. Or call collect anytime at: 312-297-3640. Our TWX number is: 910-233-2478.

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